Before the Federal Communications Commission Washington, DC 20554

τ	/FR	170	TA	N /	A D	77 T	A 7	TT.	ТТ	$\boldsymbol{\mathcal{C}}$
١	/ F.K	17.0	וו	IVI.	ΑК	ΥI	Æ	NI)	1.1	

Complainant,

v.

THE POTOMAC EDISON COMPANY,

Defendant.

Proceeding No. 19-___ Bureau ID No. EB-19-MD-___

POLE ATTACHMENT COMPLAINT

VERIZON MARYLAND LLC

By Counsel:

Curtis L. Groves Verizon 1300 I Street NW Suite 500 East Washington, DC 20005 (202) 515-2179

Christopher S. Huther Claire J. Evans Wiley Rein LLP 1776 K Street NW Washington, DC 20006 (202) 719-7000 chuther@wileyrein.com cevans@wileyrein.com

Date: November 21, 2019

TABLE OF CONTENTS

I.	SUMMARY1								
II.	PARTIES AND JURISDICTION								
III.	FACTS AND ARGUMENT								
	A.	Verizon Is Entitled to a Just and Reasonable Pole Attachment Rate							
		1.	The New Telecom Rate Is the Just and Reasonable Rate Under the Presumption the 2018 <i>Third Report and Order</i> Established						
		2.	The New Telecom Rate Is Also the Just and Reasonable Rate Under the Standard the 2011 <i>Pole Attachment Order</i> Established						
			a)	Potomac Edison Charges Unjust and Unreasonable Rates	12				
			b)	Potomac Edison Has Long Had a Four-to-One Pole Ownership Advantage	14				
			c)	Verizon Genuinely Lacks the Ability To Terminate Potomac Edison's Rates and Obtain Just and Reasonable Rates Through Negotiations.	14				
			d)	Potomac Edison Has Not and Cannot Identify Any Agreement Provision that Provides Verizon a Net Material Advantage Over Its Competitors.	19				
	B.			ion Should Set Verizon's Just and Reasonable Rate at the Level and Refund Verizon's Overpayments	33				
IV.	COUN	NT I – U	JNJUST	AND UNREASONABLE RATES	36				
V.	RELIEF REQUESTED								
INFO	RMATI	ON DE	SIGNA	TION	39				
RULE	1.721(M) VEI	RIFICA	TION	40				
DECL	ARAT	ION OF	PAYM	ENT	41				
CERT	TIFICAT	ΓE OF S	SERVIC	Е	42				

I. SUMMARY

The Pole Attachment Act entitles Verizon to just and reasonable pole attachment rates.

The Act also prohibits Potomac Edison² from charging Verizon rates that exceed the rate it charges Verizon's competitors, a rate known as the "new telecom rate." But Potomac Edison collects rates from Verizon that are

times higher than the new telecom rate, and Potomac Edison refuses to voluntarily reduce those rates to the new telecom level. Potomac Edison's conduct violates the Pole Attachment Act, 47 U.S.C. § 224(b), and the Commission's implementing regulations and orders, including the 2011 Pole Attachment Order and 2018 Third Report and Order.

The Commission should order Potomac Edison to refund more than

Potomac Edison collected in violation of federal law during the applicable three-year statute of limitations period and set Verizon's rate at the just and reasonable new telecom level.

Verizon and Potomac Edison jointly use more than 100,000 utility poles in Maryland under terms and conditions of a joint use agreement entered in 1959 and amended in 1998 when Potomac Edison owned nearly four-fifths of the jointly used poles. Potomac Edison retains this

¹ 47 U.S.C. § 224; see also Implementation of Section 224 of the Act; A National Broadband Plan for Our Future, Report and Order and Order on Reconsideration, 26 FCC Rcd 5240, 5331 (¶ 209) (2011) ("Pole Attachment Order").

² In this Complaint, "Potomac Edison" refers to the defendant, which is a FirstEnergy operating company in Maryland. Verizon's affiliates are filing a related Complaint against Potomac Edison's Pennsylvania affiliates, Metropolitan Edison Company ("Met-Ed"), Pennsylvania Electric Company ("Penelec") and Penn Power Company ("Penn Power"). The Complaints have factual overlap because the parties' pre-complaint negotiations included all four FirstEnergy companies.

³ See In the Matter of Accelerating Wireline Broadband Deployment, Third Report and Order and Declaratory Ruling, 33 FCC Rcd 7705, 7767-71 (¶¶ 123-29) (2018) ("Third Report and Order"); Pole Attachment Order, 26 FCC Rcd at 5336 (¶ 217).

⁴ Third Report and Order, 33 FCC Rcd 7705; Pole Attachment Order, 26 FCC Rcd 5240; see also 47 C.F.R. §§ 1.1401, 1.1413.

four-to-one pole ownership advantage today and has used it to preserve unlawful, unreasonably high contract rates for years after the Commission directed Potomac Edison and other electric utilities to eliminate the "widely disparate pole rental rates [that] distort infrastructure investment decisions and in turn could negatively affect the availability of advanced services and broadband."⁵

Since early 2012, Verizon has asked FirstEnergy⁶ for just and reasonable rental rates, focusing first on the rates Pennsylvania affiliate Met-Ed imposed and later expanding the discussions to include Potomac Edison and two additional Pennsylvania affiliates, Penelec and Penn Power. Throughout, FirstEnergy has deployed stalling tactics and offered evolving—but consistently meritless—explanations in a coordinated effort to maintain its excessive pole rent income stream. It first asserted Verizon was not eligible for rate relief for joint use agreements that pre-date the Commission's 2011 *Pole Attachment Order*—a position at odds with Commission precedent and "the supremacy of federal law over contracts." Later, FirstEnergy stated Verizon should continue to pay more than the rate its competitors pay because Verizon enjoys "competitive advantages," the alleged value of which it never quantified and which are not advantages at all. And now, a full year after the Commission issued its 2018 *Third Report and Order* establishing a presumption that Verizon and other ILECs should be charged no higher than the new telecom rate, FirstEnergy has still refused a material reduction to Verizon's rate in Maryland (or Pennsylvania).

_

⁵ Pole Attachment Order, 26 FCC Rcd at 5243 (¶ 6).

⁶ Potomac Edison and its Pennsylvania affiliates Met-Ed, Penelec, and Penn Power are collectively referred to as "FirstEnergy" in this Complaint.

⁷ Third Report and Order, 33 FCC Rcd at 7731 (¶ 50) (citation omitted).

The Commission should reject Potomac Edison's longstanding and coordinated effort to evade its legal obligations. It should grant Verizon's complaint, require Potomac Edison to charge Verizon the just and reasonable new telecom rate, and order Potomac Edison to refund the amounts taken in violation of law during the three-year statute of limitations that applies in Maryland. By doing so, the Commission will send a needed message to the industry that the Commission will enforce its 2011 and 2018 Orders and will not countenance tactics that increase broadband deployment costs by denying providers their statutory right to a just, reasonable, and competitively neutral pole attachment rate.

II. PARTIES AND JURISDICTION

- 1. Complainant Verizon Maryland LLC ("Verizon") is an incumbent local exchange carrier ("ILEC") that provides telecommunications and other services in areas of Maryland. It is a Delaware limited liability company with a principal place of business at 1 East Pratt Street, 8th Floor, Baltimore, MD 21202. Verizon may be reached through counsel at (202) 515-2179.
- 2. Defendant The Potomac Edison Company ("Potomac Edison") is a Maryland corporation located at 10802 Bower Avenue, Williamsport, MD 21795. It is an operating subsidiary of FirstEnergy Corporation, "one of the nation's largest investor-owned electric systems." 10
- 3. Potomac Edison and Verizon are party to a joint use agreement that contains the rates, terms, and conditions for each party's use of the other party's utility poles. The joint use

⁸ Ex. A at VZ00003 (Aff. of Stephen C. Mills, Nov. 19, 2019 ("Mills Aff.") ¶ 4).

⁹ See Ex. 21 at VZ00320 (Maryland Business Entity Search).

¹⁰ See Ex. 20 at VZ00318 (Excerpt from FirstEnergy 2018 Annual Report at 7 (Mar. 11, 2019)).

agreement was entered in 1959 with Verizon's predecessor and amended in 1998 to include the currently operative pole attachment rate provision.¹¹

- 4. The 2019 rental year is the most recent year that Potomac Edison has invoiced Verizon for pole attachment rent. According to the 2019 invoice, the joint use agreement covers 100,898 poles jointly used by the parties, with Potomac Edison owning 79,264 and Verizon owning 21,634. Potomac Edison, therefore, owns 79% of the poles that the parties currently share—reflecting a four-to-one pole ownership advantage. 4
- 5. The Commission has jurisdiction over this pole attachment rate dispute under 47 U.S.C. § 224.15
- 6. Potomac Edison is a "utility" within the meaning of 47 U.S.C. § 224(a)(1) because it is an electric utility that owns or controls poles used, in whole or in part, for wire communications. ¹⁶ Potomac Edison is not owned by any railroad, any person who is cooperatively organized, or any person owned by the Federal Government or any State.
- 7. The State of Maryland has not certified to the Commission that it regulates the rates, terms, and conditions for pole attachments and so it has not reverse-preempted the Commission's jurisdiction under 47 U.S.C. § 224(c).

¹¹ See Ex. 1 at VZ00108-120 (Agreement between Potomac Edison and The Chesapeake and Potomac Tel. Co. of Md. (1959), amended in 1998 ("JUA")).

 $^{^{12}}$ Ex. A at VZ00004 (Mills Aff. \P 7).

¹³ *Id.* (Mills Aff. ¶ 6).

¹⁴ See id. Potomac Edison, therefore, has greater bargaining power than the two-to-one pole ownership advantage that justified rate relief in the *Verizon Virginia* decision. See *Verizon Va. v. Va. Elec. & Power Co.*, 32 FCC Rcd 3750, 3756-57 (¶ 13) (EB 2017) ("*Dominion Order*").

¹⁵ 47 U.S.C. § 224(b)(1).

 $^{^{16}}$ See Ex. 22 at VZ00324 (Excerpt from FirstEnergy 2018 Form 10-K at 1 (Feb. 19, 2019)); see also 47 U.S.C. \S 224(a)(1).

- 8. This is one of two related Complaints being filed with the Commission based, at least in part, on the same claim and same set of facts. Verizon's affiliates, Verizon Pennsylvania LLC and Verizon North LLC, are filing the related Complaint against FirstEnergy affiliates Met-Ed, Penelec, and Penn Power. A separate action between the parties has not been filed with any court or other government agency based on the same claim or same set of facts, in whole or in part, and Verizon does not seek prospective relief that is identical to the relief proposed or at issue in a notice-and-comment rulemaking proceeding that is currently before the Commission. 18
- 9. Before filing this complaint, Verizon notified Potomac Edison in writing of the allegations that form the basis of this complaint and invited a response within a reasonable period of time.¹⁹ Verizon also, in good faith, engaged in face-to-face executive-level discussions and had many discussions with Potomac Edison and its Pennsylvania affiliates concerning the possibility of settlement.²⁰

III. FACTS AND ARGUMENT

10. Verizon has been "entitled to pole attachment rates ... that are just and reasonable" under 47 U.S.C. § 224(b)(1) since the July 12, 2011 effective date of the Commission's *Pole Attachment Order*, and has been presumptively entitled to the new telecom

¹⁷ See Verizon Pa. LLC and Verizon N. LLC v. Metropolitan Edison Co., et al., Proceeding No. 19- , Bureau ID No. EB-19-MD- (filed Nov. 20, 2019) ("Verizon v. FirstEnergy Pa.").

¹⁸ Electric utilities have sought review of the Commission's new telecom rate presumption in a petition for reconsideration at the FCC and petition for review at the U.S. Court of Appeals for the Ninth Circuit. The presumption remains effective, however, and the pending petitions cannot affect Verizon's statutory right to just and reasonable pole attachment rates for use of Potomac Edison's poles.

¹⁹ See, e.g., Ex. 16 at VZ00213-266 (Letter from B. Trosper, Verizon, to S. Strah, FirstEnergy (Dec. 20, 2017)).

²⁰ Ex. A at VZ00005-12 (Mills Aff. ¶¶ 10-27).

Potomac Edison instead has denied Verizon a just and reasonable rate, over-collecting rents by more than ______, on average, each year during the applicable three-year statute of limitations. ²² Because Potomac Edison has refused to negotiate just and reasonable rates, the Commission should apply its new telecom rate presumption and provide Verizon long-overdue rental rate relief and refunds of its prior overpayments.

A. Verizon Is Entitled to a Just and Reasonable Pole Attachment Rate.

11. For nearly a decade, the Commission has worked to ensure that pole attachment rates are "as low and close to uniform as possible" and has directed Potomac Edison and other electric utilities to stop charging "[d]ifferent rates for virtually the same resource (space on the pole)."²³ In its 2011 *Pole Attachment Order*, the Commission took the first step to reduce the pole attachment rates that ILECs like Verizon pay.²⁴ There, the FCC held ILECs are entitled to a "competitively neutral" rate, meaning "the same rate as [a] comparable provider,' *i.e.*, the New Telecom Rate or the Cable Rate,"²⁵ if the ILEC is "attaching to other utilities' poles on terms and conditions that are comparable to those that apply to a telecommunications carrier or a cable operator."²⁶ The Commission also set the pre-existing telecom rate as a "reference point" for the

²¹ Third Report and Order, 33 FCC Rcd at 7769 (¶ 126); Pole Attachment Order, 26 FCC Rcd at 5331 (¶ 209).

²² Ex. B at VZ00030, VZ00032-33 (Aff. of Mark S. Calnon, Ph.D., Nov. 19, 2019 ("Calnon Aff.") ¶¶ 16, 21); *see also* Ex. C at VZ00052 (Aff. of Timothy J. Tardiff, Ph.D., Nov. 19, 2019 ("Tardiff Aff.") ¶ 6).

²³ National Broadband Plan at 110.

²⁴ Pole Attachment Order, 26 FCC Rcd at 5327-38 (¶¶ 199-220).

²⁵ Verizon Fla. LLC v. Fla. Power & Light Co., Mem. Op. and Order, 30 FCC Rcd 1140, 1142 (¶ 7) (EB 2015) ("FPL Order") (quoting Pole Attachment Order, 26 FCC Rcd at 5336 (¶ 217)).

²⁶ Pole Attachment Order, 26 FCC Rcd at 5336 (¶ 217).

rate that may be charged if an ILEC attaches under terms and conditions that give it a net material advantage over its competitors.²⁷

12. In spite of the 2011 Pole Attachment Order, electric utilities including Potomac Edison "continue[d] to charge [ILECs] pole attachment rates significantly higher than the rates charged to similarly situated telecommunications attachers."²⁸ As a result, in 2018, the Commission took the next step toward achieving rate reductions that should have occurred at least seven years earlier.²⁹ In the 2018 Third Report and Order, the Commission adopted a presumption that, for "new and newly-renewed pole attachment agreements," ILECs are comparable to their competitors and must be charged the same new telecom rate.³⁰ While the presumption is rebuttable, doing so requires clear and convincing evidence from the electric utility that the ILEC attaches to the utility's poles under a joint use agreement that gives the ILEC a net material advantage over its competitors.³¹ If the presumption is rebutted, the preexisting telecom rate sets a "hard cap" on the rate that may be charged. 32 This means that, as of the March 11, 2019 effective date of the 2018 Third Report and Order, Potomac Edison and other electric utilities cannot under any circumstances lawfully charge ILECs more than the preexisting telecom rate under a joint use agreement that, like the joint use agreement at issue here, is "new or newly renewed."33

²⁷ *Id.* at 5337 (¶ 218).

²⁸ Third Report and Order, 33 FCC Rcd at 7767 (¶ 123) (internal quotation marks omitted).

²⁹ *Id.* at 7767-71 (¶¶ 123-29).

³⁰ *Id.* at 7769 (¶ 126).

³¹ *Id.* at 7770-71 (¶ 128).

³² *Id.* at 7771 (¶ 129).

³³ *Id.* at 7770-71 (¶¶ 127 n.475, 129).

- 13. Potomac Edison, however, has not reduced the rates it charges Verizon despite years of negotiations.³⁴ The Commission's intervention is needed to prevent Potomac Edison's continuing disregard of the Pole Attachment Act and Commission precedent. The Commission should apply its new telecom rate presumption and set the rate for Verizon's use of Potomac Edison's poles using the new telecom rate formula.³⁵ That is the correct rate under the presumption adopted in the 2018 *Third Report and Order*, as well as under the 2011 *Pole Attachment Order*'s standard of competitive neutrality. By enforcing Verizon's right to the new telecom rate in this case, the Commission will free at least in annual pole attachment rent overpayments and ensure "greater rate parity between [I]LECs and their telecommunications competitors," which "can energize and further accelerate broadband deployment." has a charge of prevent Potomac Edison's prevent Potomac Potoma
 - 1. The New Telecom Rate Is the Just and Reasonable Rate Under the Presumption the 2018 *Third Report and Order* Established.
- 14. Although Verizon is presumptively entitled to the new telecom rate under the *Third Report and Order*, Verizon has been paying Potomac Edison rates **times as high** on average because Potomac Edison refuses to negotiate just and reasonable rates.³⁷ For the 2017 to 2019 rental years, Potomac Edison charged Verizon per pole.³⁸ During that same period, the properly calculated per-pole new telecom rate averaged \$6.03 per pole.³⁹

 $^{^{34}}$ See Ex. A at VZ00005-12 (Mills Aff. $\P\P$ 10-27).

 $^{^{35}}$ See Ex. C at VZ00052 (Tardiff Aff. ¶ 5).

³⁶ Third Report and Order, 33 FCC Rcd at 7767 (¶ 126); see also Ex. B at VZ00032-33 (Calnon Aff. ¶¶ 20-21) (calculating Verizon's average annual overpayment to Potomac Edison).

³⁷ Ex. B at VZ00030 (Calnon Aff. ¶ 14).

 $^{^{38}}$ Ex. A at VZ00005 (Mills Aff. \P 8).

 $^{^{39}}$ For the 2017 to 2019 rental years, the properly calculated new telecom rates for Verizon's use of Potomac Edison's poles were \$5.97, \$6.07, and \$6.05 per pole. *See* Ex. B at VZ00029 (Calnon Aff. ¶ 13).

- and newly-renewed joint use agreements," including joint use agreements "that are automatically renewed, extended, or placed in evergreen status." Here, the initial term of the joint use agreement expired on January 1, 1963, and the agreement has continued to govern the parties' joint use relationship in accordance with a provision that automatically renews and extends the agreement until it is terminated. The new telecom rate presumption, therefore, applies.
- 16. In particular, the joint use agreement states that, after its initial term, the agreement "shall continue in force thereafter until terminated by either party at any time" upon advance written notice. 42 "Continue" is a synonym of "extend," meaning "[t]o carry further in time, space or development: extend." The agreement, as a result, "automatically ... extended" after the *Third Report and Order* took effect. 44 It also "automatically renewed" as its terms and conditions have "repeat[ed] so as to reaffirm" since the effective date. 45 Under Maryland law, an agreement that "continue[s] indefinitely until either or both parties terminate the contract" is an

 $^{^{40}}$ Third Report and Order, 33 FCC Rcd at 7770 (¶ 127 & n.475).

⁴¹. See Ex. 1 at VZ00118 (JUA, Art. XXI).

⁴² *Id.* (emphasis added). Even if the joint use agreement is terminated, it continues to govern all poles jointly used by the parties at the time of termination due to an "evergreen" provision. *See* Section III.A.2.c, below. As a result, Verizon genuinely lacks the ability to terminate the current rental rate provision. *See FPL Order*, 30 FCC Rcd at 1150 (¶ 25) (recognizing that Verizon "genuinely lacks the ability to terminate an existing agreement" where the electric utility can "force Verizon to pay the relatively high Agreement Rates for as long as its attachments remain on [the utility's] poles pursuant to the evergreen clause").

⁴³ "Continue," *Webster's II New College Dictionary* 244 (2001) (emphasis added); *see also* "Continue," *Merriam-Webster's Collegiate Dictionary* 270 (11th ed. 2003) ("to maintain without interruption a condition, course, or action").

⁴⁴ *Third Report and Order*, 33 FCC Rcd at 7770 (¶ 127 & n.475).

⁴⁵ *Id.*; see also "Renew," Webster's II New College Dictionary 938 (2001); "Renew," Merriam-Webster's Collegiate Dictionary 990 (10th ed. 1996).

agreement that "renew[s] automatically."⁴⁶ The joint use agreement is thus newly renewed and entitled to the Commission's new telecom rate presumption.⁴⁷

Potomac Edison, therefore, must charge Verizon the new telecom rate unless Potomac Edison can rebut the Commission's newly enacted presumption with "clear and convincing evidence that [Verizon] receives net benefits under its pole attachment agreement with [Potomac Edison] that materially advantage [Verizon] over other telecommunications attachers." Potomac Edison cannot meet this standard, and it has not tried. Instead, Potomac Edison and its Pennsylvania affiliates said—more than six years into rate discussions—that they were "willing to discuss" competitive advantages they think they provide Verizon. The clear and convincing evidence standard requires much more.

 $^{^{46}}$ See John Deere Constr. & Forestry Co. v. Reliable Tractor, Inc., 957 A.2d 595, 596 n.1 & 600 (Md. 2008).

⁴⁷ Third Report and Order, 33 FCC Rcd at 7770 (¶127 n.475).

⁴⁸ *Id.*; see also 47 C.F.R. § 1.1413(b).

⁴⁹ Ex. 18 at VZ00309 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)). Potomac Edison and its Pennsylvania affiliates claimed that "the process of monetizing [the alleged] advantages that Verizon has over its competitors requires discovery from Verizon." *Id.* at VZ00310. Not so. Potomac Edison has exclusive access to its own license agreements and to the per-pole amounts it has received from Verizon and Verizon's competitors.

⁵⁰ See, e.g., United States v. Perez, 752 F.3d 398, 407 (4th Cir. 2014) ("Clear and convincing' evidence is 'evidence of such weight that it produces in the mind of the trier of fact a firm belief or conviction, without hesitancy, as to the truth of the allegations sought to be established, and, as well, as evidence that proves the facts at issue to be highly probable."") (citation omitted); see also Microsoft Corp. v. i4i Ltd. P'ship, 564 U.S. 91, 102 (2011) (clear and convincing evidence is a "heightened standard of proof"); Colorado v. New Mexico, 467 U.S. 310, 316 (1984) (clear and convincing evidence must "instantly tilt[] the evidentiary scales" when weighed against the other evidence offered); In the Matter of Connect Am. Fund, 32 FCC Rcd 6282, 6314 (¶ 64) (2017) (clear and convincing evidence is a "higher standard" than preponderance of the evidence); see also Ex. C at VZ00065-68 (Tardiff Aff. ¶ 26).

- 18. But even if Potomac Edison could meet its burden,⁵¹ Potomac Edison still could not lawfully charge the rates it has been collecting from Verizon. The pre-existing telecom rate is "the maximum rate" an electric utility may charge if it is able to rebut the new telecom rate presumption,⁵² and here that rate has averaged \$9.14 per pole during the applicable statute of limitations.⁵³ Potomac Edison has instead charged Verizon per pole, which is times the "hard cap" set by this pre-existing telecom rate.⁵⁴
- 19. There is, therefore, no lawful basis for the rates that Potomac Edison charges

 Verizon—rates that have been, on average, per pole higher than the presumptive new

 telecom rate⁵⁵ and almost per pole higher than the maximum rate Potomac Edison could charge even if it could rebut the presumption.⁵⁶ The Commission should enforce its new telecom rate presumption to achieve the "rate parity between incumbent LECs and their telecommunications competitors" that "can energize and further accelerate broadband deployment."⁵⁷

⁵¹ But see Section III.A.2.d, below.

⁵² Third Report and Order, 33 FCC Rcd at 7771 (¶ 129).

⁵³ For the 2017 to 2019 rental years, the properly calculated pre-existing telecom rates for Verizon's use of Potomac Edison's poles were \$9.04, \$9.20, and \$9.17 per pole. *See id.* at VZ00035-36 (Calnon Aff. ¶¶ 27-28).

⁵⁴ *Id.* at VZ00036 (Calnon Aff. ¶ 28).

⁵⁵ *Id.* at VZ00030 (Calnon Aff. ¶ 14) (calculating per pole difference between perpole rate charged and average \$6.03 per-pole new telecom rate); *see also* Ex. C at VZ00060-62 (Tardiff Aff. ¶ 16-17).

⁵⁶ *Id.* at VZ00036 (Calnon Aff. ¶ 28) (calculating per pole difference between perpole rate charged and average \$9.14 per-pole pre-existing telecom rate); *see also* Ex. C at VZ00060-62 (Tardiff Aff. ¶ 16-18).

 $^{^{57}}$ Third Report and Order, 33 FCC Rcd at 7769 (¶ 126).

- 2. The New Telecom Rate Is Also the Just and Reasonable Rate Under the Standard the 2011 *Pole Attachment Order* Established.
- 20. Verizon is entitled to new telecom rates under the presumption adopted in the 2018 *Third Report and Order*—but it has also been entitled to those same new telecom rates for over seven years under the standard the Commission adopted in the 2011 *Pole Attachment Order*. This case presents the characteristics that justified rate relief as of the *Pole Attachment Order*'s July 12, 2011 effective date: (a) the rates are unjust and unreasonable, (b) Potomac Edison has long had a four-to-one pole ownership advantage, (c) Verizon genuinely lacks the ability to terminate the rates and obtain new just and reasonable rates through negotiations, and (d) the joint use agreement does not provide Verizon a net material advantage over its competitors that supports a rate higher than the new telecom rate.

a) Potomac Edison Charges Unjust and Unreasonable Rates.

21. The rates Potomac Edison charges Verizon violate the principle of "competitive neutrality" the Commission adopted in the 2011 *Pole Attachment Order* under which the "just and reasonable" rate for an ILEC is "the same rate" as the new telecom or cable rate that applies to a comparable cable or telecommunications provider.⁵⁸ During the applicable statute of limitations, Verizon has paid Potomac Edison times the new telecom rate⁵⁹ and times the pre-existing telecom rate,⁶⁰ which the *Pole Attachment Order* set as the upper-bound "reference point" on the rate that could be charged an ILEC that has a net material advantage over its

⁵⁸ Pole Attachment Order, 26 FCC Rcd at 5336 (\P 217); see also FPL Order, 30 FCC Rcd at 1142 (\P 7).

⁵⁹ Ex. B at VZ00025-26, VZ00030 (Calnon Aff. ¶¶ 6, 14).

 $^{^{60}}$ Id. at VZ00036 (Calnon Aff. ¶ 28).

competitors.⁶¹ Potomac Edison's rates are thus "unjust and unreasonable" under the standard adopted in 2011.

22. Potomac Edison charges Verizon rates that are also unjust and unreasonable as compared to the rates Potomac Edison pays for use of Verizon's poles. The Commission has found rate relief was warranted where there was a "significant disparity in the per-pole rates charged to each party" because the Commission "anticipat[ed] that incumbent LECs and electric utilities would charge each other roughly the same proportionate rate given the parties' relative usage of the pole." Here, Potomac Edison also "uses significantly more space on each joint use pole than Verizon," but pays rental rates that do not reflect its greater space requirements. Under the joint use agreement, Potomac Edison is allocated more than 2.5 times the space allocated to Verizon but pays a rate that is just times the rate paid by Verizon. And the real-world disparity is far worse because Potomac Edison is allocated *less* space than it requires and uses, while Verizon is allocated *more* space than it uses or desires, including space that it shares with its competitors.

⁶¹ Pole Attachment Order, 26 FCC Rcd at 5336 (¶ 217).

⁶² Dominion Order, 32 FCC Rcd at 3760 (quoting Pole Attachment Order, 26 FCC Rcd at 5337 (¶ 218 n.662)).

⁶³ *Id.* at 3756-57 (¶ 13).

⁶⁴ Ex. 1 at VZ00110 (JUA, Art. II) (allocating 3 feet to Verizon and 8 feet to Potomac Edison); *id.* at VZ00119 (Amendment) (assigning per pole rate to Potomac Edison for use of Verizon's poles and per pole rate to Verizon for use of Potomac Edison's poles).

⁶⁵ See id. at VZ00110 (JUA, Art. II) (excluding safety space from Potomac Edison's space allocations); see also Consolidated Partial Order, 16 FCC Rcd at 12130 (¶ 51) (holding "the 40-inch safety space ... is usable and used by the electric utility").

 $^{^{66}}$ Ex. 1 at VZ00110 (JUA, Art. II); Ex. A at VZ00017-18 (Mills Aff. $\P\P$ 38-39).

- b) Potomac Edison Has Long Had a Four-to-One Pole Ownership Advantage.
- 23. At all relevant times, Potomac Edison has owned most of the joint use poles, an advantage that Potomac Edison leveraged to obtain the rates it charges and to continue charging them. Potomac Edison's most recent invoice states that Potomac Edison owns 79% of the poles that the parties share in Maryland.⁶⁷ This four-to-one pole ownership advantage gives Potomac Edison greater bargaining power than justified rate relief in the *Dominion Order*, where the power company owned 65% of the shared utility poles for a "nearly two-to-one pole ownership advantage."⁶⁸ It also gives Potomac Edison greater bargaining power than supported the Commission's conclusion in the 2011 *Pole Attachment Order* that ILECs "may not be in an equivalent bargaining position with electric utilities in pole attachment negotiations" because "electric utilities appear to own approximately 65-70 percent of poles."⁶⁹
 - c) Verizon Genuinely Lacks the Ability to Terminate Potomac Edison's Rates and Obtain Just and Reasonable Rates Through Negotiations.
- 24. Rate relief is also justified under the standard adopted in the 2011 *Pole*Attachment Order because Verizon "genuinely lacks the ability to terminate" the current rate on account of an "evergreen" clause that requires payment of the contract rate after the joint use agreement is terminated.⁷⁰ The Enforcement Bureau previously recognized Verizon "genuinely

 $^{^{67}}$ See id. at VZ00004 (Mills Aff. \P 6); Ex. 5 at VZ00167 (2018 Invoice); see also Ex. C at VZ00060-61 (Tardiff Aff. \P 16).

 $^{^{68}}$ Dominion Order., 32 FCC Rcd at 3756-57 (¶ 13); see also Ex. C at VZ00062 (Tardiff Aff. ¶ 18).

 $^{^{69}}$ Pole Attachment Order, 26 FCC Rcd at 5329 (¶ 206); see also Ex. C at VZ00060-62 (Tardiff Aff. ¶ 16-18).

⁷⁰ See Pole Attachment Order, 26 FCC Rcd at 5336 (¶ 216). The evergreen clause provides that "notwithstanding such termination [of the agreement], this agreement shall remain in full force

lacks the ability to terminate an existing agreement" where, as here, the electric utility can "force Verizon to pay the relatively high Agreement Rates for as long as its attachments remain on [the utility's] poles pursuant to the evergreen clause."

- 25. Verizon also genuinely lacks the ability to renegotiate the rental rate provision to obtain just and reasonable rates. Verizon has sought rate relief from FirstEnergy for years, focusing first on the rates imposed by Met-Ed and later expanding the discussions to include Penelec, Penn Power, and Potomac Edison.⁷² Because FirstEnergy has refused to agree to just and reasonable rates, Potomac Edison continues to overcharge Verizon by more than on average, each year in Maryland.⁷³
- 26. Verizon's current effort to reduce its annual rental obligation to the FirstEnergy companies began with a pole purchase initiative in 2009, two years before the Commission issued the *Pole Attachment Order*. Three of Verizon's agreements with Pennsylvania affiliate Met-Ed include a "right to purchase" poles, which Verizon sought to exercise in a way that would balance the parties' pole ownership numbers.⁷⁴ Met-Ed refused to sell any poles.⁷⁵ As a

and effect with respect to all poles jointly used by the parties at the time of such termination." Ex. 1 at VZ00118 (JUA, Art. XXI).

⁷¹ FPL Order, 30 FCC Rcd at 1150 (\P 25) (quoting Pole Attachment Order, 26 FCC Rcd at 5336 (\P 216)).

⁷² Ex. A at VZ00005-12 (Mills Aff. ¶ 10-27).

⁷³ Ex. B at VZ00030, VZ00032-33 (Calnon Aff. $\P\P$ 16, 21).

⁷⁴ Ex. 6 at VZ00170-171 (Letter from W. Balcerski, Verizon, to M. Wolfe, FirstEnergy (Apr. 30, 2012)).

 $^{^{75}}$ Ex. A at VZ00006 (Mills Aff. ¶ 11).

result, after the *Pole Attachment Order* took effect, Verizon paired its pole purchase request with a request for "just and reasonable" pole attachment rates.⁷⁶

27. Since early 2012, Verizon has tried unsuccessfully to negotiate just and reasonable rates with FirstEnergy through face-to-face meetings, telephone conferences, and correspondence. FirstEnergy has claimed that Verizon is not eligible for rate relief for a joint use agreement that pre-dates the 2011 *Pole Attachment Order* an argument the Commission has rejected. It has stalled rate discussions by insisting the companies first discuss new operational terms for a joint use agreement with Met-Ed that could then be replicated across Verizon's relationships with Penelec, Penn Power, and Potomac Edison. And it has made rate offers that failed to change Verizon's annual net rental payment in any material respect. For example, five years into the negotiations, FirstEnergy made an offer that would have reduced Verizon's nearly annual net rental obligation to Met-Ed by just \$465. Its next offer was for about a 1.5% discount off that annual net rental amount, so that

⁷⁶ See Ex. 6 at VZ00171 (Letter from W. Balcerski, Verizon, to M. Wolfe, FirstEnergy (Apr. 30, 2012)); Ex. 8 at VZ00174 (Email from N. Parrish, Verizon, to L. Chapman, FirstEnergy (Sept. 10, 2012)).

⁷⁷ Ex. A at VZ00005-12 (Mills Aff. ¶¶ 10-27).

⁷⁸ See Ex. 9 at VZ00182 (Letter from T. Magee, Counsel for FirstEnergy, to W. Balcerski, Verizon (Jan. 25, 2013) (quoting *Pole Attachment Order*, 26 FCC Rcd at 5335 (¶ 216)).

⁷⁹ See FPL Order, 30 FCC Rcd at 1145 (¶ 17) ("Florida Power makes a threshold argument that the just and reasonable rate requirement in Section 224(b)(1) cannot be applied to the Agreement Rates because the Agreement pre-dates the Order. Florida Power is mistaken…").

 $^{^{80}}$ Ex. A at VZ00007 (Mills Aff. \P 13).

 $^{^{81}}$ *Id.* at VZ00009 (Mills Aff. ¶ 19).

⁸² Ex. 10 at VZ00192 (Email from D. DeWitt, FirstEnergy, to S. Mills, Verizon (Apr. 3, 2017)) (offering to reduce Verizon's 2015 rental obligation to Met-Ed from to to the contract of the

Verizon would pay about in net rent to Met-Ed.⁸³ Properly calculated new telecom rental rates that year would have resulted in a net rental payment to Met-Ed of about \$739,000.⁸⁴

- an offer that would have *increased* Verizon's annual rental obligation to Potomac Edison by more than by requiring Verizon to pay per pole, while Potomac Edison paid per pole for far more space on Verizon's poles. The offer also unreasonably paired lower rates for FirstEnergy's use of Verizon's poles in Pennsylvania (per pole) with higher rates for Verizon's use of First Energy's poles per pole to Met-Ed, per pole to Penelec, and per pole to Penn Power), and increased Verizon's annual net rental obligation to Penn Power by more than selection.
- 29. FirstEnergy also avoided discussion of alleged competitive benefits, finally providing an unsupported and conclusory list of purported benefits in June 2018.⁸⁷ FirstEnergy did not distinguish among FirstEnergy operating companies⁸⁸ and has still not provided an executed license agreement to support its claim,⁸⁹ even though Verizon has been asking for

⁸³ Ex. 12 at VZ00197 (Email from D. DeWitt, FirstEnergy, to S. Mills, Verizon (July 21, 2017)) (proposing that Verizon payment of per pole and Met-Ed per pole, for a net rental payment of per pole.)

⁸⁴ See Verizon v. FirstEnergy Pa., Aff. of Mark S. Calnon, Ph.D., Nov. 19, 2019, ¶ 26.

 $^{^{85}}$ See Ex. A at VZ00011-12 (Mills Aff. \P 25); Ex. 17 at VZ00270 (Email from S. Schafer, FirstEnergy to J. Slavin, Verizon (May 2, 2018)).

⁸⁶ See id.; see also Ex. A at VZ00011-12 (Mills Aff. \P 25).

⁸⁷ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)).

 $^{^{88}}$ Id.; see also Ex. A at VZ00012 (Mills Aff. \P 26).

⁸⁹ See id. at VZ00013 (Mills Aff. ¶ 28).

agreement and said that "modifications" to the draft agreement "are negotiated" with Verizon's competitors. 91 Verizon has access to two license agreements that Potomac Edison and its Pennsylvania affiliates entered with Verizon's affiliates, and each bears little resemblance to the draft agreement that FirstEnergy produced. 92 But even a review of the draft license agreement, which at best reflects Potomac Edison's starting point during negotiations, confirmed the joint use agreement does not provide Verizon a net material advantage over its competitors. 93

30. In November 2017, Verizon tried to change the dynamic by engaging executives at both companies in the discussions.⁹⁴ FirstEnergy first asked "whether [Verizon] insist[s] on proceeding to executive level discussions,"⁹⁵ but ultimately agreed to schedule the meeting after Verizon reiterated its request and provided a copy of its new telecom rate calculations.⁹⁶

⁹⁰ See id. at VZ00006, VZ00007-08 (Mills Aff. ¶¶ 11, 15, 16); see also Ex. 6 at VZ00171 (Letter from W. Balcerski, Verizon, to M. Wolfe, FirstEnergy (Apr. 30, 2012)) (requesting copies of license agreements); Ex. 8 at VZ00174 (Email from N. Parrish, Verizon, to L. Chapman, FirstEnergy (Sept. 10, 2012)) (requesting copies of license agreements); Ex. 11 at VZ00194 (Email from S. Mills, Verizon, to S. Schafer, FirstEnergy (July 7, 2017)) (requesting copies of license agreements).

⁹¹ Ex. 12 at VZ00197 (Email from D. DeWitt, FirstEnergy, to S. Mills, Verizon (July 21, 2017)); see also Ex. 2 at VZ00121-138 (Draft Pole Attachment Agreement Between Metropolitan Edison Company and Attaching Company Name ("Draft License")).

⁹² See Ex. 3 at VZ00139-150 (Attachment Agreement Between Met-Ed and Penelec, as "Owner," and Bell Atlantic-Pennsylvania, as "Licensee" (Sept. 25, 1988) ("Bell License")); Ex. 4 at VZ00151-165 (Telecommunication Pole and Anchor Attachment License Agreement Between Potomac Edison et al., as "Owner," and MCI Communications Services, Inc., as "Licensee" (Aug. 1, 2009) ("MCI License")).

⁹³ Ex. A at VZ00008-09 (Mills Aff. ¶ 17).

⁹⁴ Ex. 14 at VZ00208 (Letter from S. Mills, Verizon, to D. DeWitt, FirstEnergy (Nov. 2, 2017)).

⁹⁵ Ex. 15 at VZ00211 (Letter from D. DeWitt, FirstEnergy, to S. Mills, Verizon (Dec. 20, 2017)).

 $^{^{96}}$ Ex. 16 at VZ00213-266 (Letter from B. Trosper, Verizon, to S. Strah, FirstEnergy (Dec. 20, 2017)).

- 31. The parties' executives met on April 11, 2018 and continued discussions thereafter. Potomac Edison and its Pennsylvania affiliates continued to claim the contract rates are "just and reasonable" and that Verizon cannot be eligible for a new telecom rate unless it "transition[s] ... out of the pole-owning business in FirstEnergy service territories." Potomac Edison's conduct makes clear it intends to continue to charge Verizon contract rates more than times the new telecom rates that Potomac Edison may charge Verizon's competitors until the Commission orders it to stop. Verizon "genuinely lacks the ability to terminate an existing agreement and obtain a new arrangement." 100
 - d) Potomac Edison Has Not and Cannot Identify Any Agreement Provision that Provides Verizon a Net Material Advantage Over Its Competitors.
- 32. Under the principle of "competitive neutrality" adopted in 2011, Potomac Edison should have charged Verizon "the same rate" that applies to Verizon's competitors (meaning the new telecom rate) because Verizon does not receive net competitive benefits under the joint use agreement that justifies a higher rate—let alone rates averaging more per pole. ¹⁰¹ Potomac Edison has not, and cannot, show this recurring annual per-pole premium is justified.
- 33. In some ways, the joint use agreement is comparable to FirstEnergy's license agreements, but in other ways it is less advantageous. For example, the joint use agreement is similar to FirstEnergy's license agreements in that Verizon, like its competitors, must bear the

⁹⁷ Ex. A at VZ00011 (Mills Aff. ¶ 23).

⁹⁸ Ex. 17 at VZ00268 (Email from S. Schafer, FirstEnergy, to J. Slavin, Verizon (May 11, 2018).

⁹⁹ Id. at VZ00271 (Email from S. Schafer, FirstEnergy, to J. Slavin, Verizon (May 2, 2018)).

¹⁰⁰ Pole Attachment Order, 26 FCC Rcd at 5336 (¶ 216).

 $^{^{101}}$ See Pole Attachment Order, 26 FCC Rcd at 5336 (¶ 217); FPL Order, 30 FCC Rcd at 1142 (¶ 7); see also Ex. B at VZ00033-35 (Calnon Aff. ¶ 22-26).

costs associated with placing, maintaining, rearranging, transferring, and removing its attachments.¹⁰² Verizon is also required, like its competitors, to make a written application for space on FirstEnergy's poles,¹⁰³ to comply with FirstEnergy's construction specifications,¹⁰⁴ and to accommodate third parties attached to FirstEnergy's poles.¹⁰⁵

34. There are terms and conditions in the joint use agreement that *disadvantage*Verizon as compared to its competitors. For example, unlike its competitors, Verizon must "at its sole expense" determine the condition of more than 21,000 joint use poles that it owns and shares with Potomac Edison, keep them "in a safe and serviceable condition," and replace or repair its poles as they become defective. ¹⁰⁶ FirstEnergy has itself recognized that this unique pole ownership requirement imposes "substantial" costs on ILECs, including Verizon, that are not imposed on their competitors. ¹⁰⁷ Verizon is subject to other unique costs as well, as Verizon

¹⁰² See Ex. 1 at VZ00113 (JUA, Art. VIII(d)) ("Each party shall place, maintain, rearrange, transfer, and remove its own attachments at its own expense"); Ex. 4 at VZ00155 (MCI License ¶ 4) ("Licensee shall repair, maintain and remove its cable facilities ..."); see also Ex. 3 at VZ00142 (Bell License, Art. IV(1a)); Ex. 2 at VZ00126 (Draft License).

¹⁰³ See Ex. 1 at VZ00110 (JUA, Art. IV(a)) ("Whenever either party desires to reserve space for its attachments on any pole owned by the other party, ... it shall make written request therefor..."); Ex. 4 at VZ00155 (MCI License ¶ 3) ("Whenever the Licensee shall desire to attach to any pole ... of the Owner ..., the Licensee shall so request of the Owner in writing..."); Ex. 3 at VZ00141 (Bell License, Art. I(3)); Ex. 2 at VZ00124-125 (Draft License...").

¹⁰⁴ See Ex. 1 at VZ00110 (JUA, Art. III); Ex. 4 at VZ00157 (MCI License ¶ 7(b)); Ex. 3 at VZ00143 (Bell License, Art. IV(2)); Ex. 2 at VZ00126 (Draft License ■).

¹⁰⁵ See Ex. 1 at VZ00116 (JUA, Art. XV); Ex. 4 at VZ00155-156 (MCI License ¶ 5); Ex. 3 at VZ00146 (Bell License, Art. IX(1)); Ex. 2 at VZ00133 (Draft License ■).

¹⁰⁶ See Ex. 1 at VZ00112 (JUA, Art. VII(a)).

¹⁰⁷ See Comments of FirstEnergy et al. at 131, In the Matter of Implementation of Section 224 of the Act; A National Broadband Plan for Our Future, WC Docket No. 07-245 (Aug. 16, 2010) ("Unlike cable companies and CLECs, which do not own their own distribution poles, ILECs do own and control millions of distribution poles across the country."); id. at 5 ("For decades, [CLECs and cable companies] have attached their facilities to tens of millions of utility poles – at artificial and extremely modest rates mandated by the Commission – without incurring the

must provide Potomac Edison access to Verizon's poles under the same terms and conditions that apply to Verizon's use of Potomac Edison's poles. On this point, FirstEnergy agreed with Verizon in Reply Comments filed with the Commission, admitting that Verizon is subject to "burdens and obligations" that are *not* imposed on Verizon's competitors because joint use agreements, but not license agreements, "impose[] mutual obligations on both parties. 109

- 35. Because the terms and conditions in the joint use agreement are comparable or less advantageous than those in the license agreements of Potomac Edison and its Pennsylvania affiliates, 110 it is "appropriate to use the rate of the comparable attacher as the 'just and reasonable' rate for purposes of section 224(b)."111
- 36. Potomac Edison, along with its Pennsylvania affiliates, has insisted it can continue to charge far higher rates based on a scattershot list of twenty-four purported "advantages." FirstEnergy did not distinguish among operating companies or quantify the

substantial cost and inconvenience of constructing and maintaining their own distribution systems.") (emphasis added); see also Reply Comments of FirstEnergy et al. at 35, In the Matter of Implementation of Section 224 of the Act; A National Broadband Plan for Our Future, WC Docket No. 07-245 (Oct. 4, 2010) ("One of the 'burdens' for Verizon and other ILEC pole owners in joint use agreements is that they need to pay more pole costs than they would if they were not joint pole owners.") ("2010 Reply Comments").

 $^{^{108}}$ See Dominion Order, 32 FCC Rcd at 3760 (¶ 21) ("By identifying as alleged 'benefits' to Verizon services that Verizon is likewise required to extend to Dominion under the Joint Use Agreements, Dominion has failed to show that Verizon receives a disproportionate benefit").

¹⁰⁹ 2010 Reply Comments at 35 (citing Comments of Verizon at 18 (Aug. 16, 2010)).

 $^{^{110}}$ Ex. A at VZ00008-09 (Mills Aff. \P 17); Ex. B at VZ00033-35 (Calnon Aff. \P 22-25); Ex. C at VZ00065-68 (Tardiff Aff. \P 26).

¹¹¹ See Pole Attachment Order, 26 FCC Rcd at 5336 (¶ 217).

¹¹² See Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)).

value of any of the alleged advantages. ¹¹³ But even based on the information available to Verizon, Potomac Edison's list fails to identify anything that provides Verizon a net material advantage over its competitors that would justify charging Verizon rates that have been more than per pole higher than the properly calculated new telecom rate. ¹¹⁴

- 37. Potomac Edison's list of twenty-four claimed advantages is repetitive, often listing the same alleged "advantage" multiple times as though to increase its value. Without the duplication, Potomac Edison's list boils down to ten alleged advantages. 115
- 38. *First*, Potomac Edison relies on a one-time \$1,000 "agreement preparation fee" that it claims to collect from Verizon's competitors, ¹¹⁶ although the fee does not appear in Potomac Edison's license agreement. ¹¹⁷ But even if Potomac Edison consistently collected this one-time fee from Verizon's competitors, it would not justify continuing to charge Verizon a higher rental rate—let alone a higher, annually recurring rental rate for each of the more than 79,000 Potomac Edison poles to which Verizon is attached in Maryland. ¹¹⁸ And while Verizon

 $^{^{113}}$ Id.; Ex. A at VZ00013 (Mills Aff. \P 28); see also Ex. B at VZ00033-34 (Calnon Aff. \P 22-23); Ex. C at VZ00065-68 (Tardiff Aff. \P 26).

¹¹⁴ See Pole Attachment Order, 26 FCC Rcd at 5336 (¶ 217); FPL Order, 30 FCC Rcd at 1142 (¶ 7); see also Ex. B at VZ00030, VZ00033-35 (Calnon Aff. ¶¶ 14, 22-25).

¹¹⁵ Ex. A at VZ00013-14 (Mills Aff. ¶¶ 28-29).

¹¹⁶ See Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)) (alleging that "Verizon does not pay any agreement preparation fees as do Verizon's competitors"); see also Ex. 3 at VZ00147 (Bell License, Art. XII(1)) ("Licensee shall pay to Owner, upon execution of this Agreement, a license preparation and administration fee of One Thousand (\$1,000.00) Dollars.").

¹¹⁷ Compare Ex. 4 (MCI License) with Ex. 3 at VZ00147 (Bell License, Art. XII(1)) and Ex. 2 at VZ00133 (Draft License).

¹¹⁸ In one year, a \$1,000 agreement preparation fee would have been fully covered by a one-cent increase in Verizon's rental rate. (\$1,000 one-time fee / 79,264 Potomac Edison poles = \$0.01). Verizon has instead been paying Potomac Edison annually recurring rates that have averaged

may not have paid Potomac Edison a one-time "agreement preparation fee" to access Potomac Edison's poles, Potomac Edison also did not pay the "agreement preparation fee" to access Verizon's poles. As a result, any value to Verizon from not paying the fee was entirely offset by the same value that Verizon provided Potomac Edison, resulting in no "net" benefit to Verizon. 119

39. Second, Potomac Edison points to non-existent differences in the permitting process, claiming Verizon has been provided "speed to market" worth "millions" because Verizon does not pay Potomac Edison application fees and need not wait for Potomac Edison's permitting process to attach or overlash. 120 These claims are unfounded. It is not clear that Verizon's competitors pay application fees either, 121 especially since Potomac Edison cannot impose such fees unless it can show that it does not already recover such costs through its annual

more per pole than the new telecom rate applicable to Verizon's competitors. Ex. B at VZ00035 (Calnon Aff. ¶ 25).

¹¹⁹ See Third Report and Order, 33 FCC Rcd at 7768 (¶ 123) (requiring utility to prove that the ILEC "receives net benefits under its pole attachment agreement with the utility that materially advantage the incumbent LEC over other telecommunications attachers") (emphasis added); see also Dominion Order, 32 FCC Rcd at 3760 (¶ 21) ("By identifying as alleged 'benefits' to Verizon services that Verizon is likewise required to extend to Dominion under the Joint Use Agreements, Dominion has failed to show that Verizon receives a disproportionate benefit …."); see also Ex. C at VZ00065-68 (Tardiff Aff. ¶ 26).

¹²⁰ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)) (alleging that "Verizon does not pay any attachment application fees as do Verizon's competitors," that "Verizon does not have to wait for the permitting process to receive permission to attach and so can serve customers faster and with less expense than its competitors," that "[u]nlike new attachers, Verizon can overlash at will without having to wait for the permitting process to receive permission to attach in the first place. This allows Verizon to serve customers faster and with far less expense than its competitors," and that "Verizon's speed to market compared to new attachers (and even existing third party attachers) is worth millions to Verizon, and costs millions to its competitors").

¹²¹ See Ex. 19 at VZ00314-315 (Field Reference Guide Joint Use – FirstEnergy Operating Company (FEOC) Joint Use Complete Application Requirements (updated as of May 20, 2019) ("FirstEnergy Field Reference Guide")).

rate calculation.¹²² And Verizon and its competitors wait a comparable amount of time to attach comparable facilities.¹²³ The same notifications and work are required before an attachment and the same make-ready timelines and overlashing rules apply.¹²⁴ There is, therefore, no material difference between Verizon and its competitors in the one-time permitting process that would justify charging Verizon a higher rate for every pole every year.¹²⁵

40. *Third*, Potomac Edison incorrectly claims Verizon incurs lower engineering, make-ready, and pre-and post-installation survey costs. ¹²⁶ Verizon completes much of this work itself, surveying a pole to determine what make-ready is required, completing the engineering necessary to accommodate its attachment, transferring its facilities when required, and reviewing

¹²² See Amendment of Rules and Policies Governing the Attachment of Cable Television Hardware to Utility Poles, 2 FCC Rcd 4387, 4393 (¶ 44) (1987) ("A separate charge or fee for items such as application processing ... is not justified if the costs associated with these items are already included in the rate..."); Cavalier Tel., LLC v. Va. Elec. and Power Co., 15 FCC Rcd 9563, 9574 (¶ 22) (2000), vacated by settlement, 17 FCC Rcd 24414 (2002) ("Because Respondent provided no explanation that the administrative costs associated with permit application processing are not otherwise included in the carrying charges, we find that the fees are an unjust and unreasonable rate, term, or condition.").

 $^{^{123}}$ See Ex. A at VZ00015-16 (Mills Aff. \P 34).

¹²⁴ See id. The draft license agreement Potomac Edison relies on purports to require , but this requirement is unenforceable under Commission rules and precedent. See Ex. 2 at VZ00126 (Draft License). But see 47 C.F.R. § 1.1415(a); Third Report and Order, 33 FCC Rcd at 7761 (¶ 115).

 $^{^{125}}$ Ex. A at VZ00015-16 (Mills Aff. ¶¶ 33-34).

¹²⁶ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)) (alleging that "Verizon's make-ready costs are dramatically lower than its competitors' costs," that "Verizon's engineering costs are dramatically lower than its competitors' costs," that "Verizon's survey costs are dramatically lower than its competitors' costs," that "Verizon is not subject to audit costs as are Verizon's competitors," that "[p]re-planning makes room in advance for Verizon, and Verizon benefits considerably from being the first attacher on an unencumbered pole," that "[n]ew attachers that wish to compete with Verizon must contend with already-congested poles," and that "[p]ole transfer provisions relieve Verizon of considerable attachment transfer costs that third party attacher competitors must incur.").

Edison follows a comparable approach under the license agreements, which require "Licensee [to] submit with each application a survey of the subject poles," large place on Licensee an obligation to "transfer its facilities," and clarify that the "Licensee [may] engineer all new line extensions and any rebuild of existing facilities" on the poles. Verizon's competitors may also complete their own engineering, survey, and simple make-ready work under the Commission's one-touch make-ready rules. And, if Potomac Edison does perform some of this work for Verizon's competitors, Potomac Edison still could not rely on that difference to collect higher rentals from Verizon. The draft license agreement, for example, merely reserves the right

¹³² If

such costs are ever incurred by Verizon's competitors, ¹³³ Verizon incurs comparable costs because it performs its own safety checks, at no cost to Potomac Edison. ¹³⁴ And where Verizon "performs [that] particular service itself and incurs costs comparable to its competitors in

¹²⁷ Ex. A at VZ00016 (Mills Aff. ¶ 35); *see also* Ex. 1 at VZ00113 (JUA, Art. VIII(d)) ("Each party shall place, maintain, rearrange, transfer, and remove its own attachments at its own expense").

 $^{^{128}}$ Ex. 4 at VZ00159-160 (MCI License \P 14).

¹²⁹ Ex. 3 at VZ00142 (Bell License, Art. IV(1a)).

¹³⁰ *Id.* at VZ00143 (Bell License, Art. V(2)).

¹³¹ 47 C.F.R. § 1.1411(j).

¹³² Ex. 2 at VZ00128 (Draft License ¶ **■**).

¹³³ If Potomac Edison decides to conduct these discretionary inspections, it cannot charge licensees for the cost if it is already captured in its rental rates. *See Amendment of Rules and Policies Governing the Attachment of Cable Television Hardware to Utility Poles*, 2 FCC Rcd at 4393 (¶ 44) ("A separate charge or fee for items such as … periodic inspections of the pole plant is not justified if the costs associated with these items are already included in the rate….").

¹³⁴ Ex. A at VZ00013-14 (Mills Aff. ¶¶ 29-30).

performing that service," Potomac Edison may not increase Verizon's rental rate based on "costs that [Potomac Edison] does not incur." 135

- 41. When Potomac Edison does perform make-ready work at Verizon's request,
 Verizon is not advantaged over its competitors. Potomac Edison invoices Verizon—as Potomac
 Edison apparently invoices Verizon's competitors—using a cost-causer approach that requires
 Verizon to pay for make-ready that Potomac Edison completes to accommodate Verizon's
 attachments. There is thus no competitive difference related to make-ready that justifies a
 higher rate for Verizon.
- 42. Fourth, Potomac Edison claims Verizon is advantaged when it attaches to Potomac Edison's poles because Verizon is not contractually required to affix a tag that identifies its facilities and can also attach to Potomac Edison's multi-ground neutrals, guys, and anchors. These are not differences that give Verizon a net advantage over its competitors. It is a Verizon company policy to tag its facilities, ¹³⁸ so Verizon incurs comparable tagging costs to its competitors even if they are not contractually imposed. ¹³⁹ And, in situations in which a guy

¹³⁵ Dominion Order, 32 FCC Rcd at 3759 (¶ 18); see also id. (n.67) ("Dominion cannot justify charging higher rates to Verizon based on costs that only Verizon incurs. To charge a higher rate on this basis would effectively double charge Verizon"); see also Ex. C at VZ00065-68 (Tardiff Aff. ¶ 26).

¹³⁶ Ex. A at VZ00016 (Mills Aff. ¶ 36); see also Ex. 4 at VZ00160 (MCI License ¶ 14) ("Owner shall invoice Licensee for the actual cost … upon completion of the Make Ready Work.").

¹³⁷ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)) (alleging that "Verizon need not affix identification tags as do Verizon's competitors," that "Verizon can attach to FirstEnergy's multi-ground neutrals, unlike Verizon's competitors," and that "Verizon can attach to FirstEnergy's guys and anchors, unlike Verizon's competitors").

¹³⁸ Ex. A at VZ00016-17 (Mills Aff. ¶ 37).

¹³⁹ In addition, Potomac Edison has not included a contractual tagging requirement in all of its license agreements. *See* Ex. 3 (Bell License).

or anchor is required, Verizon also is not advantaged. Under FirstEnergy's license agreements, FirstEnergy has agreed to "itself provide such guying or bracing" for its licensee ¹⁴⁰ and has granted "the nonexclusive right to attach to [its] anchors." But unlike the license agreements, Verizon has agreed to let Potomac Edison attach to Verizon's guys and anchors as well—further eliminating any suggestion of a "net" competitive benefit to Verizon. ¹⁴²

43. Fifth, Potomac Edison claims Verizon is guaranteed more space on each pole than is guaranteed Verizon's competitors. Hat But the joint use agreement does not guarantee space to Verizon (although it does guarantee space to Potomac Edison due to the nature of its facilities) and cannot guarantee any space to Verizon given the statutory right of access provided to Verizon's competitors. Instead, the joint use agreement expressly allows Potomac Edison and third parties to attach within the space allocated to Verizon. And Potomac Edison has rented segments of that space to Verizon's competitors, collecting additional rent from them without offset to Verizon. Thus, the mere fact that the joint use agreement designates three feet of

¹⁴⁰ *Id.* at VZ00144-145 (Bell License, Art. VI).

 $^{^{141}}$ Ex. 4 at VZ00154 (MCI License ¶ 2).

 $^{^{142}}$ See Ex. 1 at VZ00111 (JUA, Art. V(c)); see also Ex. C at VZ00065-68 (Tardiff Aff. \P 26).

¹⁴³ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)) (alleging that "Verizon is guaranteed a number of feet on each pole").

 $^{^{144}}$ See Ex. A at VZ00017-18 (Mills Aff. $\P\P$ 38, 40).

¹⁴⁵ See 47 U.S.C. § 224(f); see also In the Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, 11 FCC Rcd 15499, 16053 (¶ 1170) (1996) ("Permitting an incumbent LEC, for example, to reserve space for local exchange service, to the detriment of a would-be entrant into the local exchange business, would favor the future needs of the incumbent LEC over the current needs of the new LEC. Section 224(f)(1) prohibits such discrimination among telecommunications carriers.").

¹⁴⁶ See Ex. 1 at VZ00110, VZ00116 (JUA, Arts. II, XV).

¹⁴⁷ Ex. A at VZ00017-18 (Mills Aff. ¶ 38).

space as "normal space" for the "telephone company" does not advantage Verizon. ¹⁴⁸ Verizon does not want, require, or occupy three feet of space on Potomac Edison's poles. ¹⁴⁹ Verizon and its competitors now deploy similarly-sized lightweight copper and fiber optic cables that occupy comparable space on Potomac Edison's poles. ¹⁵⁰ Verizon is not advantaged.

44. *Sixth*, Potomac Edison claims Verizon is advantaged because its facilities are placed at the lowest location on Potomac Edison's poles. ¹⁵¹ In fact, Verizon's location on Potomac Edison's poles increases its costs and sets it at a competitive disadvantage. Its facilities have the highest exposure to damage from oversized vehicles, vandalism, and similar hazards. ¹⁵² Verizon's facilities also suffer more harm from those that work above. ¹⁵³ It has experienced damage from gaffs, ladders, and bucket trucks, has had holes poked in its cables, and has had support wires broken because of its lowest location on the pole. ¹⁵⁴ Verizon also receives more requests to raise its cables to accommodate oversize loads that exceed standard vertical clearance requirements. ¹⁵⁵ And Verizon incurs increased pole transfer costs because it must be the last

 $^{^{148}\,}See$ Ex. 1 at VZ00110 (JUA, Art. II).

 $^{^{149}}$ Id. at VZ00018 (Mills Aff. \P 39).

 $^{^{150}}$ *Id*.

¹⁵¹ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)) (alleging that "Verizon gets lowest attachment height which is easier to access" and that "because Verizon gets the lowest position on the pole, it benefits from one additional attachment (*i.e.* 2 attachments in first 12" of space)").

 $^{^{152}}$ Ex. A at VZ00018-19 (Mills Aff. \P 41).

¹⁵³ *Id*.

¹⁵⁴ *Id*

 $^{^{155}}$ *Id.* at VZ00019 (Mills Aff. ¶ 42).

company to transfer its facilities to a replacement pole. ¹⁵⁶ Verizon often makes more than one trip to the replacement pole because others have not completed their transfers as scheduled. ¹⁵⁷

45. The increased costs associated with Verizon's lowest pole position are not offset by any alleged benefit from "easier ... access." There is little measurable difference between the time and effort required to work at the lowest location on a pole and at the location just above. The same safety measures and preparation are required. Nor are the increased costs offset by Verizon's ability to make "2 attachments in first 12 [inches] of space." Verizon's competitors are also presumed to occupy 12 inches of space, and Potomac Edison has not explained why two attachments could not also be located within 12 inches of space located higher on the pole. Nor could it, as FirstEnergy included a photograph in its Field Reference Guide depicting two non-ILEC attachments within 12 inches of space. And even if there were some minimal benefit to Verizon from its location, it is offset by the benefit enjoyed by Verizon's competitors because Verizon is lowest on the pole. Verizon's location is the result of standard construction practices that pre-date third-party attachers. Maintaining that pole location eliminates ambiguity about the ownership of particular facilities on the pole and ensures

 $^{^{156}}$ Id. at VZ00019 (Mills Aff. ¶ 43).

¹⁵⁷ *Id*.

¹⁵⁸ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)).

 $^{^{159}}$ See Ex. A at VZ00019-20 (Mills Aff. \P 44).

¹⁶⁰ *Id*.

¹⁶¹ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)).

¹⁶² 47 C.F.R. § 1.1410.

¹⁶³ Ex. 19 at VZ00315 (FirstEnergy Field Reference Guide).

 $^{^{164}}$ See Ex. A at VZ00019-20 (Mills Aff. \P 44).

that communications facilities do not crisscross mid-span. ¹⁶⁵ It does not justify charging Verizon a higher rate than its competitors.

46. Seventh, Potomac Edison relies on wholly avoidable fees it may try to charge some of Verizon's competitors for unauthorized attachments and safety violations. ¹⁶⁶ It has no right to impose safety violation fees under the license agreements Verizon has reviewed, ¹⁶⁷ and FirstEnergy's draft license agreement clarifies Verizon's competitors

168 Verizon's competitors may also avoid unauthorized attachment fees, either by properly reporting their attachments in the first instance or by correcting the violation within six months of notification. ¹⁶⁹ There is, therefore, no reason to charge Verizon a higher rate based on fees that its competitors should never pay.

¹⁶⁵ *Id*.

¹⁶⁶ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)) (alleging that "Verizon is not subject to unauthorized attachment penalties as are Verizon's competitors" and that "Verizon is not subject to safety violation penalties as are Verizon's competitors").

¹⁶⁷ See Ex. 3 (Bell License) & Ex. 4 (MCI License).

¹⁶⁸ See Ex. 2 at VZ00127 (Draft License

¹⁶⁹ See Pole Attachment Order, 26 FCC Rcd at 5291 (¶ 115) (holding that an unauthorized attachment fee provision is presumptively reasonable if it includes "[a]n opportunity for attachers to avoid sanctions by submitting plans of correction within 60 calendar days of receipt of notification of a violation or by correcting the violation and providing notice of the correction to the owner within 180 calendar days of receipt of notification of the violation.").

- 47. *Eighth*, Potomac Edison claims Verizon is advantaged by more favorable insurance and indemnification provisions than apply to Verizon's competitors. ¹⁷⁰ But Verizon has the insurance the draft license agreement requests, ¹⁷¹ and is subject to indemnification provisions that, like those in the license agreements, assign liability based on fault. ¹⁷² But even if there were some difference between the joint use agreement and license agreement provisions, it would not justify an increase to Verizon's rental rate. Only the joint use agreement provisions are reciprocal: unlike its competitors, Verizon must extend to Potomac Edison the same insurance and indemnification provisions for its use of Verizon's poles. ¹⁷³ These additional obligations must be "weigh[ed], and account[ed] for" in the analysis of competitive neutrality. ¹⁷⁴ When they are, the reciprocal provisions cannot provide Verizon a net material benefit that warrants a higher rental rate. ¹⁷⁵
- 48. *Ninth*, Potomac Edison argues Verizon is not required to post a security bond as its competitors must. 176 But at least one executed license

¹⁷⁰ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)) (alleging that "[i]nsurance provisions are less burdensome for Verizon than for Verizon's competitors" and that "[i]ndemnification provisions are more favorable to Verizon, saving Verizon millions in out of court settlements over its competitors").

¹⁷¹ See Ex. A at VZ00020 (Mills Aff. ¶ 46); see also Ex. 2 at VZ00131 (Draft License).

 $^{^{172}}$ See Ex. 1 at VZ00115-116 (JUA, Art. XIV); Ex. 3 at VZ00145 (Bell License, Art. VII); Ex. 4 at VZ00161 (MCI License ¶ 19).

 $^{^{173}}$ See Ex. A at VZ00020 (Mills Aff. ¶ 46).

¹⁷⁴ *Pole Attachment Order*, 26 FCC Rcd at 5335 (¶ 216 n.654).

¹⁷⁵ See, e.g., Ex. C at VZ00065-68 (Tardiff Aff. \P 26).

¹⁷⁶ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)) (alleging that "Verizon need not post bonds or other security, as must Verizon's competitors").

agreement do not include a security bond requirement.¹⁷⁷ And even if Potomac Edison imposes a security bond requirement on some of Verizon's competitors, it would still not provide Verizon a "net advantage" relative to its competitors because the treatment of security bonds in the joint use agreement is reciprocal.¹⁷⁸ Since "Verizon is likewise required to extend to [Potomac Edison] under the Joint Use Agreements" the same security bond provision that Potomac Edison extends to Verizon, the "alleged benefit[]" cannot increase the rate Verizon pays.¹⁷⁹

49. Finally, Potomac Edison relies on the evergreen provision in the joint use agreement, noting it gives Verizon access to Potomac Edison's poles after the joint use agreement is terminated. This does not advantage Verizon over its competitors, as Verizon's competitors have ongoing and statutorily protected access to Potomac Edison's poles due to their federal right of access. And, regardless, Verizon has provided Potomac Edison the same evergreen protection so it can continue to use Verizon's poles after termination. Thus, the evergreen provision—which Potomac Edison has misused to try to lock in outdated rentals that

¹⁷⁷ See & Ex. 3 (Bell License).

¹⁷⁸ See Pole Attachment Order, 26 FCC Rcd at 5337 (¶ 218); see also Third Report and Order, 33 FCC Rcd at 7768 (¶ 123) (requiring utility to prove that the ILEC "receives net benefits under its pole attachment agreement with the utility that materially advantage the incumbent LEC over other telecommunications attachers.") (emphasis added).

¹⁷⁹ See Dominion Order, 32 FCC Rcd at 3760 (¶ 21).

¹⁸⁰ Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)) (alleging that "[e]vergreen provisions in our joint use agreements mean Verizon cannot be removed from FirstEnergy poles even if the contract is terminated, unlike Verizon's competitors.").

¹⁸¹ 47 U.S.C. § 224(f).

¹⁸² Ex. 1 at VZ00118 (JUA, Art. XXI).

provide it an over recurring annual premium—are in no way a net competitive benefit provided Verizon. 183

- B. The Commission Should Set Verizon's Just and Reasonable Rate at the New Telecom Level and Refund Verizon's Overpayments.
- ond reasonable pursuant to Section 224(b)(1)" as of the July 12, 2011 effective date of the *Pole Attachment Order*. 184 Here, that just and reasonable rate should be the new telecom rate, which will start to set Verizon on par with its comparable competitors if Potomac Edison is ordered to refund more than in net rent that Verizon has overpaid "plus interest, consistent with the applicable statute of limitations." But even if the Commission determines Verizon is not entitled to the new telecom rate, the just and reasonable rate cannot exceed the pre-existing telecom rate, which also would require a refund of over in net rent overpaid by Verizon to date during the applicable statute of limitations in Maryland. 186
- 51. State law provides the applicable statute of limitation for violations of Section 224 because the Commission decided to treat claims that a pole attachment agreement's rates, terms, and conditions are "unjust and unreasonable" consistently "with the way that claims for

¹⁸³ See, e.g., Ex. B at VZ00030 (Calnon Aff. ¶ 16); Ex. C at VZ00065-68 (Tardiff Aff. ¶ 26).

¹⁸⁴ See FPL Order, 30 FCC Rcd at 1141 (\P 5 n.9) (quoting Pole Attachment Order, 26 FCC Rcd at 5331 (\P 209)).

¹⁸⁵ 47 C.F.R. § 1.1407(a)(3); Ex. B at VZ00030-33 (Calnon Aff. ¶¶ 16-21) (calculating overpayment of to date within the applicable statute of limitations period as compared to proportional new telecom rates).

¹⁸⁶ Ex. B at VZ00036-37 (Calnon Aff. ¶¶ 29-32) (calculating overpayment of within the applicable statute of limitations period as compared to proportional pre-existing telecom rate).

monetary recovery are generally treated under the law."¹⁸⁷ This follows from a long line of precedent that "[w]hen there is no statute of limitations expressly applicable to a federal statute, 'the general rule is that a state limitations period for an analogous cause of action is borrowed and applied to the federal claim."¹⁸⁸ And where, as here, the federal claim involves a contract, "contract law provides the best analogy" and the court should "adopt the general contract law statute of limitations."¹⁸⁹ Thus, in the *Dominion Order*, the Enforcement Bureau cited the parties' agreement to the applicability of a five-year statute of limitations for actions involving a Virginia contract.¹⁹⁰

52. The applicable statute of limitation in Maryland is three years. ¹⁹¹ A refund of the amounts that Verizon has overpaid during the last three rental years will be consistent with the Commission's intention that "monetary recovery in a pole attachment action extend as far back in time as the applicable statute of limitations allows." ¹⁹² Any other result "discourages pre-

¹⁸⁷ See Pole Attachment Order, 26 FCC Rcd at 5289-90 (¶¶ 110-12); see also In the Matter of Implementation of Section 224 of the Act; A Nat'l Broadband Plan for Our Future, 25 FCC Rcd 11864, 11902 (¶ 88) (2010) ("Generally speaking, a plaintiff is entitled to recompense going back as far as the applicable statute of limitations allows. There does not appear to be a justification for treating pole attachment disputes differently.").

¹⁸⁸ Hoang v. Bank of Am., N.A., 910 F.3d 1096, 1101 (9th Cir. 2018) (quoting Cty. of Oneida v. Oneida Indian Nation, 470 U.S. 226, 240 (1985)). See also Spiegler v. District of Columbia, 866 F.2d 461, 463-64 (D.C. Cir. 1989) ("When Congress has not established a statute of limitations for a federal cause of action, it is well-settled that federal courts may 'borrow' one from an analogous state cause of action, provided that the state limitations period is not inconsistent with underlying federal policies.").

¹⁸⁹ *Hoang*, 910 F.3d at 1101. Moreover, the Commission could have, but did not, specify a one-size-fits-all federal statute of limitations, further reinforcing that the "applicable statute of limitations" is drawn from state law.

¹⁹⁰ See Dominion Order, 32 FCC Rcd at 3764 (¶ 28 n.104) (citing Va. Code § 8.01-246(2)).

 $^{^{191}}$ See Md. Code Ann. Cts. & Jud. Proc. \S 5-101.

¹⁹² Pole Attachment Order, 26 FCC Rcd at 5290 (¶ 112).

complaint negotiations between the parties," "fails to make injured attachers whole, and is inconsistent with the way that claims for monetary recovery are generally treated under the law." And here, Verizon should be made as whole as possible. It has paid Potomac Edison unjust and unreasonable rates for years while Potomac Edison and its Pennsylvania affiliates thwarted Verizon's efforts—which began before the *Pole Attachment Order*'s July 12, 2011 effective date—to reduce Verizon's annual pole attachment rent. ¹⁹⁴

53. The new telecom rates for Verizon should be properly calculated using the Commission's presumptive inputs.¹⁹⁵ Although Potomac Edison has asserted it can charge new telecom rates that are higher than the rates that Verizon seeks,¹⁹⁶ Potomac Edison has not provided evidence that would rebut the Commission's presumptions, and Verizon is not aware of any that exists.¹⁹⁷ The Commission should thus find the "just and reasonable" rate for Verizon is the per-pole new telecom rate that results from a proper application of the Commission's rate formulas.¹⁹⁸ By enforcing Verizon's right to this just and reasonable rate, the Commission will

¹⁹³ *Id.* at 5289 (¶ 110).

¹⁹⁴ See Ex. A at VZ00005-12 (Mills Aff. ¶ 10-27). During the applicable statute of limitations period, when Potomac Edison charged Verizon per pole, Verizon charged CLECs and cable companies rates that ranged from per pole. See id. at VZ00005 (Mills Aff. ¶ 9); see also FPL Order, 30 FCC Rcd at 1150 (¶ 25 n.84) (requesting "evidence as to the rate Verizon charges cable companies and competitive LECs to attach to its poles").

¹⁹⁵ See 47 C.F.R. § 1.1413(b) ("[T]here is a presumption that incumbent local exchange carriers ... may be charged no higher than the rate determined in accordance with § 1.1406(e)(2)."); see also Ex. C at VZ00054-59 (Tardiff Aff. ¶¶ 10-14).

¹⁹⁶ See, e.g., Ex. 17 at VZ00272-307 (Attachments to Email from S. Shafer, FirstEnergy, to J. Slavin, Verizon (May 11, 2018)).

 $^{^{197}}$ See Ex. A at VZ00007 (Mills Aff. \P 15); Ex. B at VZ00026-27 (Calnon Aff. $\P\P$ 8-9).

 $^{^{198}}$ See Ex. B at VZ00025-30 (Calnon Aff. ¶¶ 5-15); Ex. C at VZ00052, VZ00054-59 (Tardiff Aff. ¶¶ 5, 10-14).

advance its deployment goals by eliminating outdated rate disparities and creating a more competitive market for deployment of broadband and other advanced services.

IV. COUNT I – UNJUST AND UNREASONABLE RATES

- 54. Verizon incorporates paragraphs 1 through 53 of this complaint as if set forth fully herein.
- 55. The Commission has authority to "regulate the rates, terms, and conditions for pole attachments to provide that such rates, terms, and conditions are just and reasonable, and shall adopt procedures necessary and appropriate to hear and resolve complaints concerning such rates, terms, and conditions."¹⁹⁹
- Verizon's use of Potomac Edison's poles under the presumption adopted in the 2018 *Third*Report and Order and under the principle of competitive neutrality adopted in the 2011 Pole

 Attachment Order. During the applicable statute of limitations, the properly calculated new telecom rates for Verizon's use of Potomac Edison's poles are \$5.97, \$6.07, and \$6.05 per pole, respectively, for the 2017 to 2019 rental years.²⁰⁰ Potomac Edison's refusal to charge Verizon a rental rate properly calculated under the FCC's new telecom formula has denied Verizon a just and reasonable rate in violation of 47 U.S.C. § 224 and the Commission's implementing regulations and orders and has taken more than from Verizon to date in violation of federal law.²⁰¹

¹⁹⁹ 47 U.S.C. § 224(b)(1).

²⁰⁰ Ex. B at VZ00029 (Calnon Aff. ¶ 13).

²⁰¹ *Id.* at VZ00030-33 (Calnon Aff. ¶¶ 16-21) (calculating overpayment of within the applicable statute of limitations period as compared to proportional new telecom rates)

Edison's poles on terms and conditions that provide it a net material advantage as compared to other telecommunications attachers, the just and reasonable rate for Verizon's use of Potomac Edison's poles is no higher than the properly calculated pre-existing telecom rate. During the applicable statute of limitations, the properly calculated pre-existing telecom rates for Verizon's use of Potomac Edison's poles are \$9.04, \$9.20, and \$9.17 per pole, respectively, for the 2017 to 2019 rental years. Under these alternative circumstances, Potomac Edison's refusal to offer Verizon a rental rate that is not higher than the rate properly calculated under the FCC's pre-existing telecom formula has denied Verizon a just and reasonable rate in violation of 47 U.S.C. \$ 224 and the Commission's implementing regulations and orders and has taken more than

V. RELIEF REQUESTED

- 58. Verizon respectfully requests that the Commission order that the unjust and unreasonable rate provision in the parties' Joint Use Agreement, as amended, is terminated consistent with the applicable statute of limitations.
- 59. Verizon respectfully requests that the Commission prescribe the rate that is properly calculated in accordance with the Commission's new telecom formula as the just and reasonable rate in a new agreement that applies to Verizon's existing and future attachments.

²⁰² See Third Report and Order, 33 FCC Rcd at 7771 (¶ 129); see also Pole Attachment Order, 26 FCC Rcd at 5336-37 (\P 218).

²⁰³ Ex. B at VZ00035-36 (Calnon Aff. ¶ 27).

 $^{^{204}}$ *Id.* at VZ00035-36 (Calnon Aff. ¶¶ 29-32) (calculating overpayment of within the applicable statute of limitations period as compared to proportional pre-existing telecom rate).

- 60. Alternatively, if the Commission concludes that Potomac Edison has shown that the terms and conditions of the parties' joint use agreement provides Verizon a net material advantage relative to its competitors, then Verizon requests that the Commission prescribe as the just and reasonable rate a rate no higher than the rate properly calculated in accordance with the Commission's pre-existing telecom formula.
- 61. Verizon respectfully requests that the Commission order Potomac Edison to refund all amounts paid in excess of a just and reasonable rate during the applicable statute of limitations period and grant Verizon such other relief as the Commission deems just, reasonable, and proper.

Respectfully submitted,

By:_

Curtis L. Groves

Verizon

1300 I Street NW

Suite 500 East

Washington, DC 20005

(202) 515-2179

Christopher S. Huther

Claire J. Evans

Wiley Rein LLP

1776 K Street NW

Washington, DC 20006

(202) 719-7000

chuther@wileyrein.com

cevans@wileyrein.com

Attorneys for Verizon Maryland LLC

Dated: November 21, 2019

INFORMATION DESIGNATION

- The Verizon employees and former employees with relevant information about this rental rate dispute are identified in this Pole Attachment Complaint and its supporting Affidavits and Exhibits.
- 2. The Joint Use Agreement and certain correspondence exchanged by the parties during the rental rate negotiations are attached as Exhibits to this Pole Attachment Complaint.

 Also attached are Affidavits from individuals who were involved in or supported the rate negotiations, calculations of the rental rates that result from the Commission's new and pre-existing telecom rate formulas, and calculations of the amounts that Potomac Edison has collected in violation of 47 U.S.C. § 224(b), along with an Affidavit from Timothy J. Tardiff, Ph.D. Additional correspondence exchanged by the parties during the rate negotiations is within Potomac Edison's possession.
- 3. Should Potomac Edison seek to rebut the new telecom rate presumption, additional information will become relevant. Verizon previously sought to obtain some of this information from Potomac Edison, such as a complete set of unredacted license agreements and the support and quantification of the value associated with any competitive "benefit" that Potomac Edison relies on as support for the rates that it has charged Verizon. Verizon again seeks this information in interrogatories being served contemporaneously with this Pole Attachment Complaint. Verizon reserves the right to rely on information that is not appended to this Pole Attachment Complaint if it is provided by Potomac Edison or becomes relevant.

RULE 1.721(M) VERIFICATION

I, Curtis L. Groves, as signatory to this submission, hereby verify that I have read this Pole Attachment Complaint and, to the best of my knowledge, information, and belief formed after reasonably inquiry, it is well grounded in fact and is warranted by existing law or a good faith argument for the extension, modification, or reversal of existing law; and that it is not interposed for any improper purpose, such as to harass, cause unnecessary delay, or needlessly increase the cost of the proceeding.

Curtis L. Groves

DECLARATION OF PAYMENT

I, Claire J. Evans, counsel for Complainant Verizon Maryland LLC, hereby declare, under penalty of perjury, that Complainant paid the \$295 filing fee electronically using the Commission's electronic filing and payment system "Fee Filer" (www.fcc.gov/feefiler) on November 20, 2019, as required by Section 1.1106 of the Commission's Rules, 47 C.F.R. § 1.1106. Verizon Maryland LLC's 10-digit FCC Registration Number is 0002166825.

Claire J. Evans

CERTIFICATE OF SERVICE

I hereby certify that on November 21, 2019, I caused a copy of the foregoing Complaint, Affidavits, and Exhibits in support thereof, to be served on the following (service method

indicated):

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Room TW-A325
Washington, DC 20554
(confidential version of Complaint,
Affidavits, and Exhibits by hand delivery;
public version of Complaint, Affidavits,
and Exhibits by ECFS)

The Potomac Edison Company c/o The Corporation Trust, Inc. 2405 York Road Suite 201 Lutherville Timonium, MD 21093 (confidential and public versions of Complaint, Affidavits, and Exhibits by hand delivery)

Kimberly D. Bose, Secretary Nathaniel J. Davis, Sr., Deputy Secretary Federal Energy Regulatory Commission 888 First Street, NE Washington, DC 20426 (public version of Complaint, Affidavits, and Exhibits by overnight delivery)

Terry Romine, Executive Secretary
Maryland Public Service Commission
William Donald Schaefer Tower
6 St. Paul Street, 16th Floor
Baltimore, MD 21202
(public version of Complaint, Affidavits, and
Exhibits by overnight delivery)

Claire J. Evans

Before the Federal Communications Commission Washington, DC 20554

VERIZON	MARYI	AND	ΠC
LICIZOIN	1V1/ 11\ 1 L	μ \mathbf{u} \mathbf{v}	LLC,

Complainant,

v.

THE POTOMAC EDISON COMPANY,

Defendant.

Proceeding No. 19	
Bureau ID No. EB-19-MD	

Affidavits

- A. Affidavit of Stephen C. Mills (Nov. 19, 2019).
- B. Affidavit of Mark S. Calnon, Ph.D. (Nov. 19, 2019).
- C. Affidavit of Timothy J. Tardiff, Ph.D. (Nov. 19, 2019).

Exhibits

- 1. Agreement between The Potomac Edison Company and The Chesapeake and Potomac Telephone Company of Maryland (1959), as amended in 1998 ("Joint Use Agreement").
- 2. Draft Pole Attachment Agreement Between Metropolitan Edison Company and Attaching Company Name (provided July 21, 2017) ("Draft License").
- 3. Attachment Agreement Between Met-Ed and Penelec, as "Owner," and Bell Atlantic-Pennsylvania, as "Licensee" (Sept. 25, 1988) ("Bell License").
- 4. Telecommunication Pole and Anchor Attachment License Agreement Between Potomac Edison et al., as "Owner," and MCI Communications Services, Inc., as "Licensee" (Aug. 1, 2009) ("MCI License").
- 5. Pole Attachment Rental Invoice.
- 6. Letter from W. Balcerski, Verizon to M. Wolfe, FirstEnergy (Apr. 30, 2012).
- 7. Email from N. Parrish, Verizon to S. Schafer, FirstEnergy (Aug. 17, 2012).
- 8. Email from N. Parrish, Verizon to L. Chapman, FirstEnergy (Sept. 10, 2012).
- 9. Letter from T. Magee, Counsel for FirstEnergy, to W. Balcerski, Verizon (Jan. 25, 2013).

- 10. Email from D. DeWitt, FirstEnergy to S. Mills, Verizon (Apr. 12, 2017).
- 11. Email from S. Mills, Verizon to S. Schafer and D. DeWitt, FirstEnergy (July 7, 2017).
- 12. Email from D. DeWitt, FirstEnergy to S. Mills, Verizon (July 21, 2017) (attachment omitted, but attached to Pole Attachment Complaint as Exhibit 2).
- 13. Email from D. DeWitt, FirstEnergy to S. Mills, Verizon (Aug. 11, 2017).
- 14. Letter from S. Mills, Verizon to D. DeWitt, FirstEnergy (Nov. 2, 2017).
- 15. Letter from D. DeWitt, FirstEnergy to S. Mills, Verizon (Dec. 20, 2017).
- 16. Letter from B. Trosper, Verizon to S. Strah, FirstEnergy (Dec. 20, 2017).
- 17. Email from S. Schafer, FirstEnergy to S. Mills, Verizon (May 11, 2018).
- 18. Email from D. Karafa, FirstEnergy to B. Trosper, Verizon (June 7, 2018).

Internet Materials

- 19. Field Reference Guide Joint Use FirstEnergy Operating Company (FEOC) Joint Use Complete Application Requirements (May 20, 2019), available at https://www.firstenergycorp.com/content/dam/customer/get-help/files/joint-use-policies/application-requirements.pdf (last visited Nov. 18, 2019).
- 20. Excerpt from FirstEnergy 2018 Annual Report (Mar. 11, 2019), available at https://www.firstenergycorp.com/content/dam/investor/files/annual-reports/2018.pdf (last visited Nov. 18, 2019).
- 21. Excerpt from Maryland Business Entity Search, *available at*https://egov.maryland.gov/BusinessExpress/EntitySearch/BusinessInformation/D00515080 (last visited Nov. 18, 2019).
- 22. Excerpt from FirstEnergy 2018 Form 10-K (Feb. 19, 2019), available at https://investors.firstenergycorp.com/Cache/396797408.pdf (last visited Nov. 18, 2019).

Internet Materials

- 23. Excerpt from Order No. 70371, Case No. 8469 (Md. PSC Feb. 24, 1993).
- 24. Excerpt from Order, Case No. 06-0960 (W. Va. PSC May 22, 2007).
- 25. Excerpt from Order No. 89072, Case No. 9490 (Md. PSC Mar. 22, 2019).

Exhibit A

Before the Federal Communications Commission Washington, DC 20554

VERIZON MARYLAND LLC, Complainant, v.	Proceeding No. 19 Bureau ID No. EB-19-MD
THE POTOMAC EDISON COMPANY, Defendant.	

AFFIDAVIT OF STEPHEN C. MILLS

COMMONWEALTH OF VIRGINIA)
) ss
COUNTY OF CULPEPER)

I, STEPHEN C. MILLS, being sworn, depose and say:

1. I am a Consultant – Contract Management in the Wireline Network Operations
Division of Verizon Services Corporation. I am executing this Affidavit in support of the Pole
Attachment Complaint of Verizon Maryland LLC ("Verizon") against the Maryland operating
subsidiary of FirstEnergy Corp. known as The Potomac Edison Company ("Potomac Edison"). I
am also executing an Affidavit today in support of a related Pole Attachment Complaint that
Verizon Pennsylvania LLC and Verizon North LLC are filing against Pennsylvania operating
subsidiaries of FirstEnergy Corp. known as Metropolitan Edison Company ("Met-Ed"),
Pennsylvania Electric Company ("Penelec"), and Pennsylvania Power Company ("Penn
Power"). I know the following of my own personal knowledge and, if called as a witness in this
action, I could and would testify competently to these facts under oath. I reserve the right to
supplement or revise this Affidavit as additional information becomes available.

- 2. I have a Bachelor of Science in Professional Technology Studies with a concentration in Telecommunications from Pace University. I have worked for Verizon for over 23 years. I began my career working with telecommunications facilities and utility pole infrastructure as an installer and repairman. I then became a cable splicing technician where I worked on the physical placement and connection of telecommunication facilities in both the aerial and buried environment. From there, I was promoted to an engineering assistant where I designed the placement of telecommunication facilities in both the aerial and buried environment. In 2005, I was promoted to my current position. As a Consultant Contract Management, I am responsible for the negotiation and implementation of joint use agreements and pole attachment agreements in Verizon's service areas in Maryland, Pennsylvania, Delaware, Virginia, and Washington, DC. These include the joint use agreement with Potomac Edison that is attached to Verizon's Pole Attachment Complaint as Exhibit 1.
- 3. I also provide support on issues relating to access to Verizon-owned utility poles and am aware of the terms and conditions that typically apply to competitive local exchange carriers ("CLECs") and cable companies that attach to poles owned by incumbent local exchange carriers ("ILECs") and investor-owned electric utilities. I also have access to information maintained by Verizon's CLEC affiliates in Maryland: MCI Communications Services, Inc., MCImetro Access Transmission Services Corp., and XO Communications Services, LLC.
- 4. Verizon Maryland is a Delaware limited liability company with a principal place of business at 1 East Pratt Street, 8th Floor, Baltimore, Maryland 21202. It is an ILEC that provides telecommunications and other services to areas of Maryland. Verizon shares utility poles in Maryland with Potomac Edison. Potomac Edison's service territory includes parts of western Maryland, including (but not limited to) Frederick and Allegany County.

A. Potomac Edison's Unjust and Unreasonable Rates

5. Potomac Edison sends Verizon an annual invoice pursuant to a 1998 amendment to the parties' joint use agreement, which took effect when Potomac Edison owned a substantial majority of the joint use poles. According to Verizon's records, in 1998, Potomac Edison owned nearly four-fifths of the poles that Potomac Edison and Verizon share:

	Potomac Edison	Verizon	Total
Joint Use Poles (1998)	86,825	22,798	109,623
Percent Ownership	79%	21%	

6. This pole ownership disparity has not materially changed since the rate methodology took effect. The parties' most recent invoice, which was for the 2019 rental year, shows that Potomac Edison continues to hold a nearly four-to-one pole ownership advantage:

	Potomac Edison	Verizon	Total
Joint Use Poles (2019)	79,264	21,634	100,898
Percent Ownership	79%	21%	

7. Each year, Potomac Edison charges Verizon for the net rental amount that results when Potomac Edison's rent for use of Verizon's poles is subtracted from Verizon's rent for use of Potomac Edison's poles. A copy of Potomac Edison's invoice for 2019 pole attachment rent is attached to Verizon's Pole Attachment Complaint as Exhibit 5. The 2019 invoice, which is the most recent rental year invoiced by Potomac Edison, is representative of the invoices FirstEnergy has sent, and Verizon has paid, each year since at least the effective date of the *Pole Attachment Order*. ¹

_

¹ Implementation of Section 224 of the Act; A National Broadband Plan for Our Future, Report and Order and Order on Reconsideration, 26 FCC Rcd 5240 (2011) ("Pole Attachment Order").

8. I understand that a three-year statute of limitations is applicable to this dispute. The following table includes the net rental amounts that Potomac Edison invoiced for the three most recent rental years (2017 through 2019), with annual net rental amounts rounded to the nearest dollar. These amounts were paid in full by Verizon:

	Verizo	on Gross Rent	-	Potomac 1	Edison Gross Rent	=	Verizon Net Rent
Rental Year	Potomac Edison Poles	Rate for Verizon Use of Potomac Edison Poles		Verizon Poles	Rate for Potomac Edison Use of Verizon Poles		Net Rent Verizon Paid Potomac Edison
2017	79,592			21,666			
2018	79,434			21,654			
2019	79,264			21,634			

9. These net rental payments were calculated using rental rates for Verizon that far exceed the rental rates Verizon charged CLECs and cable companies attached to Verizon's poles. For example, for the 2017 to 2019 rental years, when Verizon paid Potomac Edison per pole, Verizon charged CLECs and cable companies pole attachment rates that ranged from per pole in Maryland.

B. Potomac Edison's Refusal to Negotiate a Just and Reasonable Rate

10. I have knowledge of Verizon's negotiations with Potomac Edison for a just and reasonable pole attachment rental rate that complies with federal law, including the Commission's 2011 *Pole Attachment Order* and 2018 *Third Report and Order*,² and I have personally participated in numerous discussions with Potomac Edison and its Pennsylvania affiliates Met-Ed, Penelec, and Penn Power (collectively "FirstEnergy") concerning the

4

² In the Matter of Accelerating Wireline Broadband Deployment, Third Report and Order and Declaratory Ruling, 33 FCC Rcd 7705 (2018) ("Third Report and Order").

possibility of settlement. Some of the correspondence exchanged by the companies during the negotiations is attached to Verizon's Pole Attachment Complaint as Exhibits 6 to 18.

- 11. Verizon has sought rate relief from FirstEnergy for years, focusing first on the rates imposed by Met-Ed and later expanding the discussions to include Penelec, Penn Power, and Potomac Edison. As evident from the correspondence, Verizon's efforts began a few years before the Commission's *Pole Attachment Order* took effect in July 2011. At that time, Verizon tried to reduce the annual pole attachment rent that it pays FirstEnergy by purchasing poles from Met-Ed. Because Met-Ed refused to sell poles, Verizon wrote to Met-Ed several times in 2012 to request instead that Met-Ed provide Verizon a just and reasonable pole attachment rate.³

 Verizon also asked for copies of license agreements with CLECs and cable companies so that it could determine whether Verizon should pay the same rate as its competitors because the license agreements contain comparable terms and conditions to those in the joint use agreements.
- 12. In response, FirstEnergy took the position that Verizon was not entitled to lower pole attachment rates for joint use agreements that pre-date the *Pole Attachment Order*. But it also stated that, if Verizon paid the then-current pole attachment rental invoices in full, it would discuss replacing the joint use agreements with new consolidated joint use agreements containing new rates, terms, and conditions. Verizon, as a result, paid FirstEnergy's rental invoices for 2012 (Met-Ed and Penelec) and 2013 (Penn Power and Potomac Edison) and shortly thereafter, the parties began discussing a new joint use agreement. As with the rental rate negotiations, we first focused on negotiating a new joint use agreement for Met-Ed, with the understanding that

5

³ See Compl. Ex. 6 at VZ00170-172 (Letter from W. Balcerski, Verizon to M. Wolfe, FirstEnergy (Apr. 30, 2012)); Compl. Ex. 7 at VZ000174 (Email from N. Parrish, Verizon to S. Schafer, FirstEnergy (Aug. 17, 2012)).

the new agreement could then be replicated to also apply to Penelec, Penn Power, and Potomac Edison.

- 13. FirstEnergy insisted that we first discuss the operational aspects of a new joint use relationship. It eventually became clear that FirstEnergy was using the operational discussions to stall and postpone any discussion of a rental rate reduction. Nearly five years later, in April 2017, I finally participated in a conference call with FirstEnergy about a new rental rate for the Met-Ed territory. As with the operational terms, our conversation focused first on rates for the Met-Ed territory, and it was my expectation that our discussions would later expand to include Penelec, Penn Power, and Potomac Edison.
- 14. I was surprised to learn that, after many years of negotiations, FirstEnergy proposed only to convert the current Met-Ed contract rates into reciprocal per-pole rates that would essentially provide Met-Ed the same net rental income each year. Deanna DeWitt, Supervisor, Joint Use and Cable Locating, FirstEnergy, followed up with a spreadsheet that confirmed that, after five years of negotiation, Met-Ed was proposing to reduce Verizon's annual net rental obligation by just \$465.4
- 15. During the summer of 2017, I continued to discuss rental rates with Ms. DeWitt and Stephen Schafer, Manager, Joint Use & Cable Locating, FirstEnergy, and made a compromise offer that would have accepted, for purposes of settlement, certain rate inputs that were very favorable to Met-Ed and not supported by real-world conditions.⁵ Met-Ed rejected the offer. During a conference call in July 2017, FirstEnergy claimed for the first time that the joint

⁴ See Compl. Ex. 10 at VZ00189-192 (Email from D. DeWitt, FirstEnergy to S. Mills, Verizon (Apr. 12, 2017)).

⁵ Met-Ed did not produce any verified survey data, and there is none of which I am aware, that would permit a departure from the FCC's presumptive rate inputs for any of the defendants.

use agreements provide Verizon competitive benefits that justify Verizon's payment of higher pole attachment rates than are charged CLECs and cable companies. FirstEnergy did not identify or quantify these "competitive benefits," and had still not provided the license agreements necessary to validate the new claims, even though Verizon requested them in 2012.

- 16. I reiterated Verizon's request for copies of license agreements, and, in July 2017, Ms. DeWitt emailed me a license agreement that she described as a "template presented to requesting CLEC / CATV entities with the understanding that modifications are negotiated." A copy of this draft license agreement is attached to Verizon's Pole Attachment Complaint as Exhibit 2. Although the draft license agreement only references FirstEnergy relied on the draft license agreement in our later discussions and correspondence as showing the terms and conditions that Met-Ed and its affiliates, including Potomac Edison, would seek from CLECs and cable companies.
- Potomac Edison because it is the starting point for its negotiations with licensees. My review of the proposed license terms nonetheless confirmed my expectation that Verizon should receive the same rental rate as its competitors. That understanding was further confirmed upon my review of two license agreements that FirstEnergy companies entered with Verizon affiliates Bell Atlantic Pennsylvania and MCI Communications Services, Inc. (collectively, the "affiliate license agreements"). Copies of these license agreements are attached to Verizon's Pole Attachment Complaint as Exhibits 3 and 4. They include terms and conditions that are significantly different from the terms and conditions in the draft license agreement and establish

7

⁶ See Compl. Ex. 12 at VZ00197 (Email from D. DeWitt, FirstEnergy to S. Mills, Verizon (July 21, 2017)).

that the draft license agreement is not an accurate representation of the terms and conditions that apply to Verizon's competitors. Potomac Edison and its affiliates, however, have still not provided a single signed license agreement showing the terms and conditions that they provide to Verizon's competitors.

- 18. I have nonetheless reviewed the draft license agreement, as well as the affiliate license agreements. I have also reviewed over a hundred additional pole attachment agreements throughout my 23-year career. Based on my experience, I have concluded that the terms and conditions in the draft license agreement and the affiliate license agreements are comparable to the terms and conditions in the joint use agreement and do not justify any increase over the new telecom rate paid by Verizon's competitors, much less the significant rate difference charged under the joint use agreement.
- 19. Having reviewed the draft license agreement, I continued to try to negotiate a just and reasonable rate. But it became clear to me that FirstEnergy was unwilling to make any material movement on rates, let alone treat Verizon as comparable to its competitors. For example, in July 2017, FirstEnergy made a rate offer that would have charged Verizon per pole for use of Met-Ed's poles, while charging Met-Ed a lower per pole rate for use of Verizon's poles. Under the offer, Verizon would have received a mere 1.5% discount off the most-recently invoiced amount of a street and a street and have produce a net rental obligation to Met-Ed of about . At the same time, Met-Ed acknowledged that it was charging Verizon's competitors a new telecom rate.⁸

⁷ See id.

⁸ See Compl. Ex. 2 at VZ00133 (Draft License); Compl. Ex. 12 at VZ00197 (Email from D. DeWitt, FirstEnergy to S. Mills, Verizon (July 21, 2017)) (attaching Draft License).

- 20. Ms. DeWitt claimed that Met-Ed's rate offer was based on the pre-existing telecom rate formula, but the pre-existing telecom formula, when properly applied, does not produce such a high rate for Verizon. I asked Ms. DeWitt for her rate calculations, which she provided.⁹ The calculations showed that FirstEnergy had manipulated the pre-existing telecom rate formula and inputs to increase the rates that Verizon would pay and decrease the rates that Met-Ed would pay.
- 21. It was clear to me that the rate negotiations with Ms. DeWitt were destined to fail. As a result, I wrote to Ms. DeWitt on November 2, 2017, asked her to propose dates for an executive-level meeting in November, and outlined the allegations that would form the basis of an FCC complaint if the negotiations were to fail. Ms. DeWitt did not provide any possible executive-level meeting dates in November. Instead, she did not even respond until December 20, 2017, and then asked whether Verizon was "willing to continue to negotiate at our level, or whether you insist on proceeding to executive-level discussions."
- 22. Meanwhile, having heard nothing from Ms. DeWitt, Brian H. Trosper, Verizon's Vice President Network Operations & Engineering, reached out directly to Steven Strah, FirstEnergy's Senior Vice President and President, Utilities Business. In a December 20, 2017 letter, Mr. Trosper reiterated Verizon's request for executive-level discussions, outlined the basis for Verizon's claim that Potomac Edison and its Pennsylvania affiliates have been violating

⁹ See Compl. Ex. 13 at VZ00200-205 (Email from D. DeWitt, FirstEnergy to S. Mills, Verizon (Aug. 11, 2017)).

¹⁰ See Compl. Ex. 14 at VZ00207-208 (Letter from S. Mills, Verizon to D. DeWitt, FirstEnergy (Nov. 2, 2017)).

¹¹ See Compl. Ex. 15 at VZ00210-211 (Letter from D. DeWitt, FirstEnergy to S. Mills, Verizon (Dec. 20, 2017)).

federal law by charging rates that are unjust and unreasonable, and sought to facilitate discussions by attaching Verizon's new telecom rate calculations for several of the years in dispute.¹²

- 23. Verizon, in good faith, engaged in face-to-face executive-level discussions with FirstEnergy on April 11, 2018 at Verizon's offices in Basking Ridge, New Jersey. FirstEnergy was represented by David Karafa, Vice President, Distribution Support; Thomas Pryatel, Director, Energy Delivery Operations; Stephen Schafer, Manager, Joint Use & Cable Locating; and Deanna DeWitt, Supervisor, Joint Use and Cable Locating. I attended the meeting, along with Mr. Trosper, Reneta Haynes, Director Wireline Network Maintenance Contracts and Utility Pole Contracts, and James Slavin, Senior Manager Network Operations & Engineering, Verizon Wireline Network.
- 24. The parties were not able to resolve the rental rate dispute at the executive-level meeting. In fact, FirstEnergy had not even shared the rental rate calculations that Verizon provided nearly four months earlier with each of the executives that attended, and so asked Verizon to send another copy after the meeting. Mr. Trosper provided the calculations by email, and the parties then continued their negotiations primarily by email.
- 25. In the months that followed, FirstEnergy continued to stand in the way of a negotiated just and reasonable rate. For example, in May 2018, FirstEnergy made another offer that relied on manipulations of the pre-existing telecom rate formula to try to perpetuate unreasonably high rental rates. The offer would have increased Verizon's annual net rental payment to Potomac Edison by more than by requiring Verizon to pay per pole,

10

¹² See Compl. Ex. 16 at VZ00213-266 (Letter from B. Trosper, Verizon to S. Strah, FirstEnergy (Dec. 20, 2017)).

while Potomac Edison paid per pole for far more space on Verizon's poles. 13 The offer also unreasonably paired lower rates for FirstEnergy's use of Verizon's poles in Pennsylvania per pole) with higher rates that Verizon would pay First Energy per pole to Met-Ed, per pole to Pennelec, and per pole to Penn Power), and increased Verizon's annual rental obligation to Penn Power by more than 14

- 26. At that time, FirstEnergy had still not identified any alleged benefits that could even be considered for purposes of calculating a rate higher than the new telecom rate. Finally, in June 2018—six years into the negotiations—Mr. Karafa provided the first list of alleged "competitive benefits" that FirstEnergy claims are sufficient to justify the rental rates it charges Verizon. I disagree that the list identifies anything that provides Verizon a net material advantage over its competitors, and I will explain the basis for my conclusion below.
- 27. FirstEnergy raised a variety of additional arguments in support of its unjust and unreasonable rates during negotiations in 2018 and 2019. Ultimately, FirstEnergy's position was that it would only consider charging Verizon a new telecom rate if Verizon would "transition ... out of the pole-owning business" and sign a CLEC license agreement. Thus, in spite of face-to-face executive-level discussions and years of discussions concerning the possibility of settlement, Verizon has been unable to obtain a just and reasonable rate through negotiations.

 $^{^{13}}$ See Compl. Ex. 17 at VZ00268-307 (Email from S. Schafer, FirstEnergy to J. Slavin, Verizon (May 2, 2018)).

¹⁴ See id.

¹⁵ See Compl. Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy to B. Trosper, Verizon (June 7, 2018)).

¹⁶ See Compl. Ex. 17 at VZ00271 (Email from S. Schafer, FirstEnergy to S. Mills, Verizon (May 2, 2018)).

- C. Potomac Edison's List of Claimed "Competitive Advantages" Does Not Justify Charging Verizon a Rate Higher than the New Telecom Rate.
- 28. I have reviewed the list of alleged "competitive advantages" that Potomac Edison and its Pennsylvania affiliates provided on June 7, 2018.¹⁷ They have not provided any quantifications for these alleged "competitive advantages," have not distinguished among JUAs or operating companies, and have not provided any signed license agreements to support the alleged "advantages." But even without this support, which Potomac Edison must provide to justify charging Verizon a rate higher than the new telecom rate, it is clear to me that Potomac Edison has not identified anything that provides Verizon a net material advantage over its competitors.
- "competitive advantages," but their list is redundant and reduces to ten different claims that do not individually or together give Verizon an advantage, much less a net material advantage, over its competitors. The list is also incomplete because, even though we discussed it numerous times, Potomac Edison and its Pennsylvania affiliates never accounted for the significant pole ownership costs that their joint use agreements place on Verizon, but that the license agreements do not place on Verizon's competitors. As a pole owner, Verizon shares in the responsibility for ensuring the safety and reliability of its joint use network with Potomac Edison. Verizon incurs costs in this regard that its competitors do not. These include the costs associated with ensuring that Verizon's construction, operations, and engineering employees are well-versed in the safety standards of Potomac Edison and the National Electrical Safety Code ("NESC"), which apply to the installation, operation, and maintenance of communications lines and equipment. Verizon

¹⁷ See Compl. Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy to B. Trosper, Verizon (June 7, 2018)).

also has its own safety, reliability, and quality standards, which its engineers and line crews are directed to follow. These pole maintenance costs are recurring and ongoing as Verizon's line crew supervisors conduct random quality-of-work inspections and otherwise seek to ensure continuing compliance with Verizon's, Potomac Edison's, and NESC standards.

- 30. As a pole owner, Verizon also incurs pole replacement costs that do not apply to its competitors, which generally do not own poles. For example, Verizon has responsibility for replacing its poles when they pose a safety hazard because of damage from car accidents, routine storms, and the like. Verizon also must replace its poles if they are found to be unreasonably interfering with the convenient, safe, or continuous use, or the maintenance, improvement, extension, or expansion, of a public road or publicly owned rail corridor. In some cases, Verizon pays for the new pole and does not receive any contribution from any other attaching entity (which includes CLECs, cable companies, and Potomac Edison). These pole ownership costs significantly drive up Verizon's costs as compared to those incurred by its competitors.
- 31. Potomac Edison's list of alleged "competitive advantages" does not account for these competitive disadvantages as it should. But even on its own, Potomac Edison's list does not identify anything that justifies charging Verizon a rate higher than the properly-calculated per-pole new telecom rate that applies to Verizon's competitors.
- 32. *First*, Potomac Edison and its Pennsylvania affiliates listed a \$1000 "agreement preparation fee" that it may impose on some licensees one time in the year that a license agreement is entered. ¹⁸ It is unreasonable for Potomac Edison to claim that Verizon must pay a higher rental rate on every pole every year to cover a one-time \$1000 fee, particularly when Verizon did not receive the same one-time \$1000 fee from Potomac Edison when it attached to

_

¹⁸ See, e.g., Compl. Ex. 3 at VZ00145 (Bell License, Art. XII(1)).

Verizon's poles. And, in fact, Verizon incurs substantial costs to negotiate a pole attachment agreement with Potomac Edison, as evident from the years that my colleagues and I devoted to Verizon's most recent effort to negotiate a new joint use agreement. Verizon has thus incurred far greater "agreement preparation" costs than a \$1000 fee that Potomac Edison claims it may impose on some of Verizon's competitors.

- 33. Second, Potomac Edison and its Pennsylvania affiliates claimed that there are differences in the way that Verizon, and Verizon's competitors, permit new attachments. These differences, if they exist, do not reflect a competitive advantage. For example, they claim that Verizon's competitors pay higher application fees. But there do not appear to be application fees , so it is unclear how Verizon could be differently situated from its competitors. Also, because there are no application fees in the joint use agreements, Verizon does not receive application fees from Potomac Edison. There is thus no "net" benefit to Verizon, as Verizon's agreement not to receive application fees from Potomac Edison cancels out any payment of application fees it may have avoided.
- 34. I also disagree with Potomac Edison that there is some difference in the speed with which Verizon and its competitors can attach to Potomac Edison's poles. The same tasks must be completed before Verizon, or one of its competitors, attaches facilities to a Potomac Edison-owned pole. For example, Verizon must survey the pole, complete a pole sounding test, look for base rot, measure the new attachment's effect on the storm and ice loading for all facilities on the pole, ensure that there will be the required vertical clearance between the ground and Verizon's cable, determine whether any make-ready is required, coordinate with other attachers if needed, and comply with any other minimum design and structural stability requirements for the pole. I understand that Verizon's competitors would need to complete these

tasks as well, would be subject to the same make-ready timelines and overlashing rules, and would use the same electronic notification program (SPANS) to manage the process. Indeed, the Commission's recent make-ready reforms will ensure that all communications attachers can deploy within a comparable time period by establishing accelerated make-ready timelines and providing a one-touch make-ready option for simple make-ready. As a result, the amount of time required to install a comparable attachment should be comparable among communications companies.

- 35. *Third*, Potomac Edison and its Pennsylvania affiliates claimed that Verizon incurs lower engineering, make-ready, and pre-and post-installation survey costs than Verizon's competitors. This is also not evident to me. Verizon completes much of this work itself, and so incurs the cost associated with the work just like its competitors do. For example, Verizon surveys the pole to determine if and what make-ready is required, completes the engineering that is needed to accommodate its attachment, transfers its facilities when required, and reviews its attachments post-installation to ensure they comply with applicable standards.
- 36. Verizon is also not advantaged with respect to the payment of make-ready costs because, in the Potomac Edison service area, Verizon pays for make-ready under a "cost-causer" approach like the one that apparently applies to Verizon's competitors. ¹⁹ This means that Potomac Edison invoices and Verizon pays the cost of make-ready that Potomac Edison performs for Verizon, just as Verizon's competitors pay Potomac Edison for the make-ready that they require Potomac Edison to perform.
- 37. Fourth, Potomac Edison and its Pennsylvania affiliates stated that Verizon is advantaged because it is not contractually required to affix a tag that identifies its facilities on

_

¹⁹ Compl. Ex. 2 at VZ00125 (Draft License).

Potomac Edison's poles and because it can attach to Potomac Edison's multi-ground neutrals, guys, and anchors. I disagree that these are competitive advantages. With respect to tagging, it is a Verizon company policy to tag its facilities, and so Verizon incurs tagging costs like its competitors. With respect to multi-ground neutrals, it is my understanding that, because of the safety concerns created by power facilities on a utility pole, all attachers must attach to the same multi-ground neutral in order to maintain the same electric potential across all systems. Verizon and its competitors, therefore, would not be different. And with respect to guys and anchors, it is my understanding, which is reflected in the affiliate license agreements, that Verizon and Verizon's competitors may attach to Potomac Edison's guys and anchors. But because Verizon's competitors do not need to own poles, only Verizon has the responsibility to let Potomac Edison attach to Verizon's guys and anchors.

38. Fifth, Potomac Edison and its Pennsylvania affiliates asserted that Verizon is guaranteed more space on each pole than is guaranteed Verizon's competitors. This is false. Verizon is not "guaranteed" any space on Potomac Edison's poles. The joint use agreement designates 3 feet of space for the "telephone company," but it does not guarantee that the designated space will be reserved solely for Verizon. And, in my experience, Potomac Edison regularly lets Verizon's competitors install their facilities in the space that is designated under the joint use agreement as space for Verizon and collects additional rent from those third parties without offset to Verizon. Attached to the Pole Attachment Complaint as Exhibit 19 is a copy of the "Joint Use Complete Application Requirements" from FirstEnergy's Field Reference Guide Joint Use, available at https://www.firstenergycorp.com/content/dam/customer/get-help/files/joint-use-policies/application-requirements.pdf, which depict a pole that has facilities

of several attachers, and not just the ILEC, within the communications space on a FirstEnergy pole.

- 39. In addition, Verizon does not want, require, or occupy 3 feet of space or more on Potomac Edison poles. For more than a decade, Verizon has deployed (and continues to deploy) the same light-weight copper and fiber optic cables that its competitors use. Verizon thus generally requires the same amount of space on a utility pole as its competitors and should be presumed to occupy the same one foot of space.
- 40. Potomac Edison, in contrast, is provided more space on each pole than the joint use agreements designate as power space. And due to the nature of Potomac Edison's facilities, Verizon cannot rent that power space to communications attachers and must preserve the 40 inches of safety space between Potomac Edison's facilities and any communications attachments. The FCC rate formulas properly recognize that the safety space is Potomac Edison's space. For example, the FCC's default presumptions are that a 37.5-foot pole has 24 feet of unusable space and can accommodate 5 attaching entities. These presumptions are consistent with the fact that, with 6 feet of unusable space below ground and 18 feet of unusable space above ground, 4 communications attachers can attach 1 foot apart in the communications space (which is located 18 to 21 feet above ground) and there will still be 10.5 feet on the pole for the power company, including the 40 inches of safety space.
- 41. Sixth, Potomac Edison and its Pennsylvania affiliates claimed that Verizon is advantaged because its facilities are generally placed at the lowest location on Potomac Edison's poles. I disagree because Verizon's location on the pole is a disadvantage that increases Verizon's costs. With the generally lowest facilities on the pole, Verizon's facilities are harmed

=

²⁰ See 47 C.F.R. §§ 1.1409(c), 1.1410.

more frequently. They are exposed to more damage from oversized vehicles, vandalism, and similar hazards. They are also damaged more frequently from above by gaffs, ladders, bucket trucks, and contractors who work in the space above Verizon's facilities. Verizon has experienced punctured cables and broken support wires because of its location on the pole.

- 42. Verizon also receives more requests to raise its cables to accommodate oversize loads, such as house and equipment moves, because of its position on the pole. Standard vertical clearance requirements range from 15.5 feet to 18 feet. If an oversize load is taller, Verizon will likely be the only attacher that must temporarily raise its facilities.
- 43. Verizon also incurs increased pole transfer costs because it must regularly make more trips to a pole location to attach or complete a pole transfer. It is standard practice that facilities are transferred from top to bottom, which means that Verizon must wait for all other facilities to be moved before it can transfer its facilities. Verizon regularly arrives at a pole transfer location and learns that all facilities have not been transferred as scheduled. When that happens, Verizon cannot transfer its facilities, but must return at a later time to determine whether the pole is ready to complete the transfer.
- 44. Verizon nonetheless remains generally the lowest attacher on a pole because the location is consistent with standard construction practices that pre-date third-party attachers and must be maintained to ensure that all companies can quickly identify the ownership of facilities on the pole. Maintaining the consistency of Verizon's location also prevents the crossover of facilities that would occur mid-span if facilities were located in different locations on different poles. And, in my experience, there is not any material difference between the time and effort required to work on Verizon's facilities and on its competitor's facilities. The same safety

measures and preparation are required. Verizon's location on the pole, therefore, continues because it benefits all attachers, but only increases Verizon's costs.

- 45. Seventh, Potomac Edison and its Pennsylvania affiliates said that they may charge Verizon's competitors fees for unauthorized attachments and safety violations. These fees, however, cannot be imposed if attachments are properly reported and safely made. They can also be avoided after the fact by promptly fixing any problem after notice is given.²¹ Verizon, as a result, cannot be advantaged because it does not pay fees that its competitors also do not need to pay.
- 46. Eighth, Potomac Edison and its Pennsylvania affiliates claimed that Verizon is advantaged by more favorable insurance and indemnification provisions than apply to Verizon's competitors. But with respect to insurance, I confirmed that Verizon carries the insurance that is required by the draft license agreement. Verizon thus incurs the same cost as its competitors. And with respect to indemnification, the joint use agreements include an assignment of liability clause like the license agreements. Potomac Edison also fails to account for the fact that the insurance and indemnification provisions in the joint use agreements are reciprocal and apply also to Potomac Edison's use of Verizon's poles. As a result, they impose obligations on Verizon that are absent from Potomac Edison's license agreements. This necessarily eliminates any "net" benefit to Verizon.
- 47. *Ninth*, Potomac Edison and its Pennsylvania affiliates argued that Verizon is not required to post a security bond as its competitors must. This requirement does not and so Verizon cannot be advantaged by its absence from the joint use

19

[;] Pole Attachment Order, 26 FCC Rcd at 5291 (\P 115).

agreements. Also, any avoidance of a security bond in the joint use agreements is reciprocal, meaning that Potomac Edison does not have to post a security bond to attach facilities to Potomac Edison's poles. That cancels out any possible net advantage to Verizon.

48. Finally, Potomac Edison and its Pennsylvania affiliates relied on the evergreen provisions in the joint use agreement, noting that it gives Verizon access to Potomac Edison's poles after the joint use agreement is terminated. This is not an advantage. Verizon's competitors have a federal right of access to Potomac Edison's poles that is far more protective of its right to deploy broadband and other advanced services on needed infrastructure in Maryland.

Stephen C. Mills

Sworn to before me on this 19th day of November, 2019

Notary Rublic



Exhibit B

Before the Federal Communications Commission Washington, DC 20554

VERIZON MARYLAND LLC, Complainant, v.	Proceeding No. 19 Bureau ID No. EB-19-MD
THE POTOMAC EDISON COMPANY,	
Defendant.	

AFFIDAVIT OF MARK S. CALNON, PH.D.

COMMONWEALTH OF PENNSYLVANIA)
) ss
COUNTY OF BUCKS)

- I, MARK S. CALNON, being sworn, depose and say:
- 1. I am a senior consultant on economic and regulatory policy supporting Verizon's Network Operations & Engineering Group. I am executing this Affidavit in support of the Pole Attachment Complaint of Verizon Maryland LLC ("Verizon Maryland") against the Maryland operating subsidiary of FirstEnergy Corp. known as The Potomac Edison Company ("Potomac Edison"). I am also executing an Affidavit today in support of a related Pole Attachment Complaint that Verizon Pennsylvania LLC and Verizon North LLC are filing against Pennsylvania operating subsidiaries of FirstEnergy Corp. known as Metropolitan Edison Company ("Met-Ed"), Pennsylvania Electric Company ("Penelec"), and Pennsylvania Power Company ("Penn Power"). I know the following of my own personal knowledge and, if called as a witness in this action, I could and would testify competently to these facts under oath.
- 2. I have a Bachelor of Arts degree in Economics from St. Michaels College and a Ph.D., also in Economics, from the University of Colorado. My professional experience began

over 30 years ago and spans economic and regulatory policy issues in telecommunications and energy markets domestically and internationally. My specific areas of expertise include demand analysis, strategic planning, pricing and policy analysis focused primarily on the regulated product and service offerings of incumbent telecom and electric distribution companies. My responsibilities have included estimating the demand for wireline telephone service, the demand for the various jurisdictional usage classifications of the wireline network (local, intralata toll, interlata toll and switched access) as well as the demand for various new / advanced service offerings. My work in the area of pricing and costing has included the design of methodologies to determine the proper price levels and rate relationships between the wholesale provision of access services (switched and special) and retail toll and private line offerings. I have also developed pricing methodologies consistent with the market-opening requirements of the Telecommunications Act of 1996 ("TA96"). Following passage of TA96, I have also been responsible for developing studies documenting the level of competition in various market areas and advocating market-appropriate levels of regulatory relief. I have also provided economic analysis supporting litigation in the areas of damage claims regarding alleged delays in provisioning new services and claims of unreasonable discrimination relating to the pricing and costing practices associated with third party make-ready costs and pole rental rates.

3. Over the course of my career I have participated in over 30 regulatory proceedings before 20 state commissions. My responsibilities in these proceedings have included the development and filing of written testimony, participation in industry workshops, settlement conferences and ex parte presentations for Commissioners and their staff. I have also filed Affidavits with the Federal Communications Commission to support Pole Attachment Complaints filed by Verizon Florida LLC against Florida Power and Light Company and by

Verizon Virginia LLC and Verizon South Inc. against Virginia Electric and Power Company d/b/a Dominion Virginia Power.¹

4. I have relied on the best data available to Verizon in calculating the rental rates detailed in this Affidavit. I reserve the right to supplement or revise this Affidavit upon review of additional data and information, including data and information provided by Potomac Edison during the course of this proceeding.

A. Potomac Edison's Rental Rates Are Much Higher than Properly Calculated New Telecom Rates.

- 5. I calculated the per-pole new telecom rates that apply to Verizon's use of Potomac Edison's poles for the 2017 through 2019 rental years using the best information available to Verizon. I limited my calculations to these rental years because I understand that a three-year statute of limitations applies to Potomac Edison's overcharges in Maryland, and the 2017 through 2019 rental years are the three most recent years for which Potomac Edison invoiced and collected rent from Verizon.² My new telecom calculations are attached as Exhibit C-1.
- 6. In this section, I explain the formula, inputs, and data that I used to complete the calculations at Exhibit C-1. My analysis shows that the average new telecom rate for Verizon's use of Potomac Edison's poles during the 2017 through 2019 rental years was \$6.03 per pole.

¹ See Docket No. 15-190, File No. EB-15-MD-006, Pole Attachment Complaint Ex. A (Aug. 3, 2015) and Pole Attachment Complaint Reply Ex. A (Feb. 9, 2016); Docket No. 14-216, File No. EB-14-MD-003, Pole Attachment Complaint Ex. B (Jan. 31, 2014) and Pole Attachment Complaint Reply Ex. A (Nov. 24, 2015); Pole Attachment Complaint Ex. A, Docket No. 15-73, File No. EB-15-MD-002 (Mar. 13, 2015).

 $^{^{2}}$ Compl. ¶¶ 50-53.

Potomac Edison instead charged Verizon per pole,³ which is times this average \$6.03 per pole new telecom rate.

7. My calculations use the FCC's new telecom formula, which has two basic components: (1) the annual cost of pole ownership and (2) the percentage of that annual cost assigned to an attaching party, which reflects the direct space occupied by the attaching party and a share of the unusable space on the pole.⁴ Stated otherwise, the maximum rate that may be charged under the new telecom rate formula, is calculated as follows:

Rate = Space Factor x Cost

Where Space Factor =
$$\frac{\left(\frac{\text{Space Occupied}}{\text{Occupied}}\right) + \left(\frac{2}{3} \times \frac{\text{Unusable Space}}{\text{No. of Attaching Entities}}\right)}{\text{Pole Height}}$$
And Cost = Net Cost of Bare Pole x Carrying Charge Rate x Cost Allocator

8. When calculating the space factor for determining a new telecom rate for Verizon's use of Potomac Edison's poles, I used the presumptive inputs from the Commission's regulations, which provide that the space occupied by a telecommunications attacher is 1 foot, the amount of unusable space is 24 feet, pole height is 37.5 feet, and the average number of attaching entities is 5.⁵ I used the presumption that there are an average of 5 attaching entities because Potomac Edison serves areas in Maryland that are urbanized under the Commission's

³ Compl. Ex. A at VZ00005 (Aff. of S. Mills, Nov. 19, 2019, ¶ 8 ("Mills Aff.")).

⁴ 47 C.F.R. § 1.1406(d).

⁵ 47 C.F.R. §§ 1.1409(c), 1.1410.

regulations,⁶ including Frederick and Allegany County, each of which has a population greater than 50,000.⁷ The Commission's rules state that "[i]f any part of the utility's service area within the state has a designation of urbanized (50,000 or higher population) by the Bureau of Census, United States Department of Commerce, then all of that service area shall be designated as urbanized for purposes of determining the presumptive average number of attaching entities."⁸

9. Use of these presumptive inputs results in a space factor of 0.1120, which I used to calculate the new telecom rate for Verizon's use of Potomac Edison's poles:

Space Factor (2017 – 2019 Rental Yea	ars):		
Space Occupied by Verizon:		1 ft	
Total Usable Space (2/3)		0.667 ft	
Total Usable Space	13.5 ft		
Total Pole Height	37.5 ft		
Unusable Space		24 ft	
Average Number of Attaching Entities	S	5	_
SPACE FACTOR			0.1120

10. To calculate the cost component of the new telecom formula, I required three inputs: net investment per distribution pole, carrying charge rate, and cost allocator. I used a cost allocator of 0.66 when calculating rates for use of Potomac Edison's poles because Commission rules require that value when the average number of attaching entities input is 5.9 For the other two inputs to the cost calculation, I used Potomac Edison's cost data from the immediately

⁶ 47 C.F.R. § 1.1417(c); *Implementation of Section 224 of the Act; A National Broadband Plan for Our Future*, Report and Order and Order on Reconsideration, 26 FCC Rcd 5240, 5304 (¶ 149 n. 449) (2011) ("*Pole Attachment Order*") ("An urbanized service area has 50,000 or higher population, while a non-urbanized service area has under 50,000 population.").

⁷ Compl. Ex. A at VZ00003 (Mills Aff. ¶ 4); see also QuickFacts, U.S. Census Bureau, available at https://www.census.gov/quickfacts (Frederick = 72,146, Allegany County = 70,975).

⁸ 47 C.F.R. § 1.1409(c).

⁹ 47 C.F.R. § 1.1406(d)(2)(i).

preceding year to calculate a particular rental year's new telecom rate (*i.e.*, I used 2016 cost data to calculate 2017 new telecom rates).

11. I used the following formula to calculate net investment per distribution pole:

Net Pole Investment x (1 - Appurtenances Factor) Number of Poles

where net pole investment is the result of reducing gross investment assigned to the poles account by the amount of the depreciation and deferred tax reserves assigned (or allocated) to these accounts.¹⁰ The appurtenance factor, which eliminates investment in non-pole appurtenances, is presumptively 15 percent for poles owned by an electric utility, and so I used the 15 percent value when calculating new telecom rates for use of Potomac Edison's poles.¹¹

about administrative expenses, maintenance expenses, depreciation, and taxes from its FERC Form 1, along with a conservatively high "weighted average cost of capital, both debt and equity" (which increases the resulting new telecom rates that Verizon would pay). The cost of capital input that I used for the 2017 through 2019 rental years is the average of the rates of return that had, at that time, been most recently set for Potomac Edison by the Public Service Commissions of Maryland and West Virginia. Potomac Edison apparently agrees with this blended rate of return approach and it appropriately reflects the fact that Potomac Edison files

¹⁰ In the Matter of Amendment of Commission's Rules and Policies Governing Pole Attachments; Implementation of Section 703(e) of the Telecommunications Act of 1996, Consolidated Partial Order on Reconsideration, 16 FCC Rcd 12103, 12122-23, 12161 (¶¶ 32, 121) (2001).

¹¹ Amendment of Rules & Policies Governing the Attachment of Cable Television Hardware to Util. Poles, Report and Order, 2 FCC Rcd 4387 ¶ 19 (1987).

¹² See Matter of Multimedia Cablevision, Inc., 11 FCC Rcd 11202, 11215 (¶ 36) (1996).

¹³ See Compl. Ex. 17 at VZ00268-307 (Email from S. Schafer, FirstEnergy, to J. Slavin, Verizon (May 11, 2018)).

one combined FERC Form 1 that covers its poles in Maryland and West Virginia. The use of this blended rate of return is particularly conservative for the 2017 and 2018 rental years because it increases the rates that Potomac Edison may charge Verizon by combining higher outdated rates of return from different time periods, specifically a 9.68% rate of return established in Maryland in 1993 and an 8.44% rate of return established fourteen years later in West Virginia in 2007. The blended rate of return is lower for the 2019 rental years because the Maryland PSC approved a 7.15% rate of return for Potomac Edison in 2019.

13. The new telecom formula (*i.e.*, Space Factor x Net Investment per Distribution Pole x Carrying Charge Rate x Cost Allocator), using the inputs described above and Potomac Edison's cost data, produces the following per-pole rates for Verizon's use of Potomac Edison's poles, as set forth in more detail in Exhibit C-1:

Rental Year	2017	2018	2019
Using data from	2016	2017	2018
Space Factor	0.1120	0.1120	0.1120
multiplied by			
Net Investment per Distribution Pole	\$225.19	\$285.10	\$296.27
multiplied by			
Capital Carrying Charge Rate	35.85%	28.81%	27.62%
multiplied by			
Urbanized Service Area Cost Allocator	0.66	0.66	0.66
Equals			
New Telecom Rate (per pole)	\$5.97	\$6.07	\$6.05

 $^{^{14}}$ See Compl. Ex. 23 at VZ00333 (Excerpt from Md. PSC Order No. 70371); Compl. Ex. 24 at VZ00348 (Excerpt from W. Va. Commission Order, Case No. 06-0960).

¹⁵ See Compl. Ex. 25 at VZ00381 (Excerpt from Md. PSC Order No. 89072).

- 14. For comparative purposes, the straight average of these new telecom rates is \$6.03 per pole. Werizon paid Potomac Edison per pole, which is times this average new telecom rate 17 and more per pole. 18
- Potomac Edison charges Verizon because it does not account for the more favorable rate that applies to Potomac Edison's use of more space on Verizon's poles. Under the FCC's default presumptions, Verizon occupies 1 foot of space on a pole and Potomac Edison occupies 10.5 feet of space. But Potomac Edison paid per pole to use Verizon's poles, which is just times the rate that Verizon paid Potomac Edison.
 - B. Potomac Edison Collected More than with in Excess Rent from Verizon in the Last Three Years.
- 16. Potomac Edison's decision to continue charging and collecting the contract rates despite Verizon's right to just, reasonable, and competitively neutral rates under federal law has denied Verizon over , on average, in annual net rent each year, for a total of over to date during the three-year statute of limitations that should be refunded to Verizon.

 My overpayment calculation is attached as Exhibit C-3. In this section, I explain my calculation.
- 17. I calculated Verizon's overpayment in accordance with FCC regulations, which give the Commission authority to award refunds consistent with the applicable statute of limitations.²⁰ Because I understand that a three-year statute of limitations applies to Potomac

 $^{^{16}}$ (\$5.97 + \$6.07 + \$6.05) / 3 = \$6.03 per pole.

per pole / \$6.03 per pole = times.

per pole - \$6.03 per pole = per pole.

 $^{^{19}}$ See 47 C.F.R. §§ 1.1409(c), 1.1410; see also Compl. Ex. A at VZ00018 (Mills Aff. \P 40).

²⁰ 47 C.F.R. § 1.1407(a).

Edison's overcharges in Maryland,²¹ I limited my overpayment calculation to the three most recent rental years (2017, 2018, 2019) for which Potomac Edison has collected rent from Verizon.

- 18. To ensure that Verizon and Potomac Edison have proportional rates for use of each other's poles, I first calculated the proportional per-pole new telecom rates that would apply to Potomac Edison's use of Verizon's poles if Verizon pays the new telecom rental rates calculated in Exhibit C-1. My calculations of the proportional rates for Potomac Edison's use of Verizon's poles are attached as Exhibit C-2. These calculations follow the same approach detailed above with respect to Exhibit C-1, except my annual pole cost calculation is based on Verizon's reported ARMIS data²² and the 5 percent appurtenance factor that presumptively applies to poles owned by an incumbent local exchange carrier ("ILEC"), and my space factor calculation uses 10.5 feet for the space occupied input to reflect the amount of space the Commission's default presumptions assume is occupied by an electric utility.²³
- 19. I then calculated the net rental amount (meaning Verizon's rent for use of Potomac Edison's poles less Potomac Edison's rent for use of Verizon's poles) that results from the proportional new telecom rates calculated in Exhibit C-1 and C-2. The following table includes this calculation for the applicable Maryland statute of limitations period:

 $^{^{21}}$ Compl. ¶¶ 50-53.

²² My calculation of the proportional rate for the 2017 and 2018 rental years reflects Verizon's use of Part 32 Uniform System of Accounts (USOA) accounting. My calculation of the proportional rate for the 2019 rental year reflects Verizon's transition to generally accepted accounting principles (GAAP) and includes the implementation rate difference referenced at 47 C.F.R. § 1.1406(e).

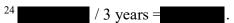
 $^{^{23}}$ See Compl. Ex. A at VZ00018 (Mills Aff. \P 40).

	Verizon Gross Rent		Verizon Gross Rent - Potomac Edison Gross Rent				Verizon Net Rent
Rental Year	Potomac Edison Poles	New Telecom Rate for Verizon Use of Potomac Edison Poles		Verizon Poles	New Telecom Rate for Potomac Edison Use of Verizon Poles		Net Rent
2017	79,592	\$5.97		21,666	\$12.59		\$202,389
2018	79,434	\$6.07		21,654	\$16.91		\$115,995
2019	79,264	\$6.05		21,634	\$16.64		\$119,557

20. Verizon paid Potomac Edison rates far higher than new telecom rates for the time period covered by the applicable Maryland statute of limitations. In the next table and at Exhibit C-3, I compare the amounts that Verizon paid Potomac Edison to the amounts Verizon should have paid Potomac Edison if rent was appropriately set at properly-calculated proportional perpole new telecom rental rates:

Refund Calculation: New Telecom Rates									
Rental Year	Net Rent Verizon Paid Potomac Edison	Net Rent at New Telecom Rates	Verizon's Overpayment to Potomac Edison						
2017		\$202,389							
2018		\$115,995							
2019		\$119,557							
Total		\$437,942							

21. These overpayments produce an average annual overpayment of per year during the applicable statute of limitations,²⁴ and do not include the additional that Verizon overpaid to Potomac Edison from the July 2011 effective date of the *Pole Attachment Order* through the 2015 rental year. They are also additional to the over



__

Potomac Edison's Pennsylvania affiliates overcharged Verizon during the applicable statute of limitations in Pennsylvania, for an average annual overpayment to the Pennsylvania companies of over per year, as detailed in the affidavit that I am executing today in support of the related pole attachment complaint against the Pennsylvania companies.

- C. Verizon Also Paid Potomac Edison Far More than the Rates that Result from the Pre-Existing Telecom Rate Formula.
- 22. The Commission set the rate that results from the pre-existing telecom formula as a "hard cap" on the rate that may be charged if an electric utility like Potomac Edison is able to prove by clear and convincing evidence that an ILEC like Verizon "receives net benefits that materially advantage the [ILEC] over other telecommunications providers" under a "new or newly renewed" joint use agreement.²⁵ I reviewed the list of alleged "competitive advantages" that Potomac Edison and its Pennsylvania affiliates provided Verizon on June 7, 2018²⁶ and identified certain foundational flaws that lead me to conclude that Potomac Edison has not identified any such net material advantage.
- 23. As an initial matter, Potomac Edison failed to provide any quantifications or credible documentation to support the existence of any of the alleged advantages in the list. The sole material offered to Verizon was a draft license agreement.²⁷ But the terms of a draft license agreement are only to a limited degree relevant to an analysis of competitive neutrality. A draft agreement, by definition, contains a party's starting point in negotiations, and is not evidence of the actual negotiated terms adopted by contracting parties. Thus, a draft license agreement is

²⁵ In the Matter of Accelerating Wireline Broadband Deployment, Third Report and Order and Declaratory Ruling, 33 FCC Rcd 7705, 7770-71 (¶¶ 127-29) (2018) ("Third Report and Order").

²⁶ See Compl. Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)).

²⁷ See Compl. Ex. 2 at VZ00121-138 (Draft License).

only relevant to an analysis of competitive neutrality in that it provides an example of the terms and conditions Potomac Edison and its Pennsylvania affiliates consider most favorable, although not necessarily achievable in practice.

24. Potomac Edison also failed to account for any disadvantages to Verizon as compared to its competitors. But any analysis of competitive neutrality must consider both burdens and benefits associated with the use of Potomac Edison's poles. As the Commission explained, "[a] failure to weigh, and account for, the different rights and responsibilities in joint use agreements could lead to marketplace distortions."²⁸ As a result, a proper calculation of a competitively neutral rental rate must consider the net difference between an ILEC and its competitors, accounting both for unique costs imposed on the ILEC and unique benefits given the ILEC, if any. Potomac Edison did not account for the unique pole ownership costs that increase Verizon's costs as compared to its competitors. It also did not factor in unique offsetting burdens imposed on Verizon under the joint use agreements. For example, unlike licensees, Verizon must provide Potomac Edison every alleged "benefit" that Potomac Edison provides Verizon. In some cases, such as with a \$1000 application preparation fee, the alleged "benefit" is not tied to the number of poles to which a party is attached.²⁹ In such cases, the value of any "advantage" to Verizon from the alleged benefit is directly offset by the cost of the reciprocal "disadvantage" to Verizon for not receiving the alleged benefit from Potomac Edison. The offset eliminates any net advantage to Verizon as compared to its competitors.

-

²⁸ *Pole Attachment Order*, 26 FCC Rcd at 5335 (¶ 216 n.654).

²⁹ See Compl. Ex. 18 at VZ00310 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)); see also Compl. Ex. 3 at VZ00145 (Bell License, Art. XII(1)).

- 25. Potomac Edison also relies primarily on one-time operational differences that are incurred, if ever, when an entity first attaches to a pole. Some differences reflect only a different process followed by a licensee as compared to Verizon, and a difference in approach does not establish a difference in cost, value, or burden. In addition, Potomac Edison has not quantified any of the differences on an annually recurring per-pole basis, which is critical when seeking to rationalize annually recurring per-pole rental rates to ensure competitive neutrality. For example, because Verizon is attached to 79,264 Potomac Edison poles, a one-time \$1000 agreement preparation fee would have been fully paid for in one rental year for a per-pole charge of one cent.³⁰ Such an isolated, one-time fee cannot justify charging a higher annually recurring rental rate, let alone one that has averaged more per pole than the new telecom rate applicable to Verizon's competitors.
- 26. These and other flaws in Potomac Edison's list of alleged competitive advantages lead me to conclude that Potomac Edison will not be able to justify charging Verizon a rental rate that is higher than a properly calculated new telecom rate. I have nonetheless calculated rates using the pre-existing telecom rate formula, which the Commission set as a "hard cap" on the rental rates that Potomac Edison may charge Verizon. My analysis shows that Potomac Edison has overcharged Verizon by more than , on average, every year than it could charge using properly calculated per-pole pre-existing telecom rates. As a result, there are no circumstances under which Potomac Edison could lawfully charge the contract rates.
- 27. My pre-existing telecom rate calculations are included with my new telecom rate calculations in Exhibit C-1. The pre-existing telecom formula differs from the new telecom

³⁰ \$1000 / 79,264 = \$0.01; see also Compl. Ex. 3 at VZ00145 (Bell License, Art. XII(1)).

³¹ Third Report and Order, 33 FCC Rcd at 7771 (¶ 129).

formula in that it does not include the 0.66 cost allocator when determining the annual cost of pole ownership. As a result, a properly calculated pre-existing telecom rate is approximately 50 percent higher than a properly-calculated new telecom rate. As shown in Exhibit C-1, I calculate the following pre-existing telecom rates for Verizon's use of Potomac Edison's poles:

Rental Year	2017	2018	2019
Using data from	2016	2017	2018
Space Factor	0.1120	0.1120	0.1120
multiplied by			
Net Investment per Distribution Pole	\$225.19	\$285.10	\$296.27
multiplied by			
Capital Carrying Charge Rate	35.85%	28.81%	27.62%
Equals			
Pre-Existing Telecom Rate (per pole)	\$9.04	\$9.20	\$9.17

- 28. These pre-existing telecom rates, which average \$9.14 per pole and set the upper bound on a just and reasonable rate, are per pole rate that Potomac per pole rate that Potomac Edison continues to demand from Verizon. Verizon has thus paid rates averaging times the pre-existing telecom during the applicable statute of limitations, 32 for an average annual per-pole overpayment above the "hard cap" set by the *Third Report and Order* of per pole. 33
- 29. I also calculated the net rental amount that Potomac Edison charged and collected from Verizon in excess of this "hard cap" on the rates that Potomac Edison may charge Verizon. My overpayment calculation is included in Exhibit C-3.
- 30. I completed this overpayment calculation in the same manner described above with respect to new telecom rates. As a result, I first calculated the net rental amounts that result from the application of proportional pre-existing telecom rates to both Verizon's use of Potomac

per pole - \$9.14 per pole = per pole.

 $^{^{32}}$ per pole / \$9.14 per pole = times.

Edison's poles and Potomac Edison's use of Verizon's poles. My calculations of the proportional pre-existing telecom rates that would apply to Potomac Edison's use of Verizon's poles if the pre-existing telecom rates from Exhibit C-1 apply are included in Exhibits C-2.

31. I then compared the net rental amounts that Verizon paid Potomac Edison to the amounts that Verizon would have paid if rent was set for Verizon and Potomac Edison at proportional pre-existing telecom rental rates. My calculation shows that, during the applicable statutes of limitations, Potomac Edison collected from Verizon more than to date above the "hard cap" set by the pre-existing telecom rate formula:

	Refund Calculation: Pre-Existing Telecom Rates										
Rental Year	Net Rent Verizon Paid Potomac Edison	Verizon's Overpayment to Potomac Edison									
2017		\$306,124									
2018		\$176,017									
2019		\$105,483									
Total		\$587,625									

These overpayments produce an average annual overpayment above pre-existing telecom rates of per year during the applicable statute of limitations, ³⁴ and do not include the additional that Verizon overpaid to Potomac Edison from the July 2011 effective date of the *Pole Attachment Order* through the 2015 rental year. They are also additional to the over that Potomac Edison's Pennsylvania affiliates overcharged Verizon during the applicable statute of limitations in Pennsylvania as compared to pre-existing telecom rates, for an average annual overpayment to the Pennsylvania companies of over

_

^{/ 3} years =

per year, as detailed in the affidavit that I am filing today in support of the related pole attachment complaint against the Pennsylvania companies.

Mark S. Calnon, Ph.D.

Sworn to before me on this 19th day of November, 2019

Notary Public

COMMONWEALTH OF PENNSYLVANIA

NOTARIAL SEAL KEVIN DAVID MOONEY, Notary Public Quakertown Borough, Bucks County My Comm. Expires October 07, 2020

Exhibit C-1

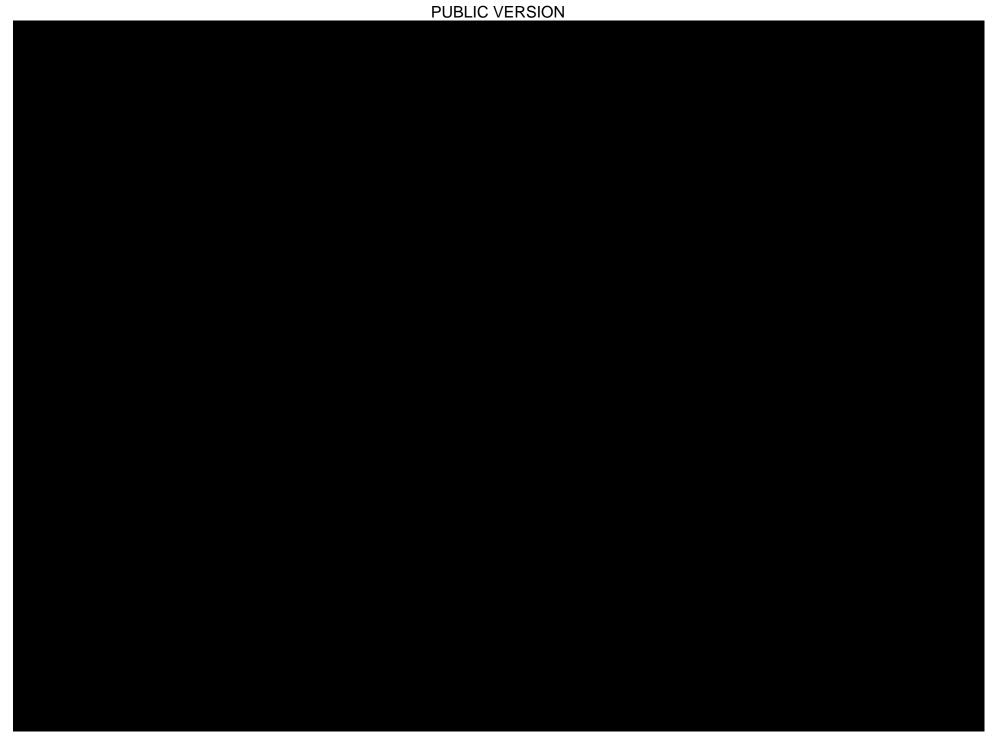






Exhibit C-2

2017 Per-Pole Rate for Potomac Edison's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults

Description tal Distribution Plant cumulated Depreciation - Distribution coss Pole Investment preciation Reserve (Poles) t Pole Plant t Deferred Taxes Allocated to Distribution t Plant less Deferred Taxes coss Pole Investment	Ó	2016 Data Gross Method 10,070,528,976 8,772,953,741 149,430,709	Source ARMIS Report 43-01 Table III, Row 100, Col. (b) ARMIS Report 43-01 Table III, Row 200, Col. (b)
tal Distribution Plant cumulated Depreciation - Distribution coss Pole Investment preciation Reserve (Poles) t Pole Plant t Deferred Taxes Allocated to Distribution t Plant less Deferred Taxes	\$ \$ \$ \$	10,070,528,976 8,772,953,741	ARMIS Report 43-01 Table III, Row 100, Col. (b)
tal Distribution Plant cumulated Depreciation - Distribution coss Pole Investment preciation Reserve (Poles) t Pole Plant t Deferred Taxes Allocated to Distribution t Plant less Deferred Taxes	\$ \$ \$ \$	10,070,528,976 8,772,953,741	ARMIS Report 43-01 Table III, Row 100, Col. (b)
cumulated Depreciation - Distribution coss Pole Investment preciation Reserve (Poles) t Pole Plant t Deferred Taxes Allocated to Distribution t Plant less Deferred Taxes	\$ \$ \$	8,772,953,741	•
oss Pole Investment preciation Reserve (Poles) t Pole Plant t Deferred Taxes Allocated to Distribution t Plant less Deferred Taxes	\$		
preciation Reserve (Poles) t Pole Plant t Deferred Taxes Allocated to Distribution t Plant less Deferred Taxes	\$	149,430,709	, , , , ,
t Pole Plant t Deferred Taxes Allocated to Distribution t Plant less Deferred Taxes	-	400 445 047	ARMIS Report 43-01 Table III, Row 101, Col. (b)
t Deferred Taxes Allocated to Distribution t Plant less Deferred Taxes	Ş	198,445,017	ARMIS Report 43-01 Table III, Row 201, Col. (b)
t Plant less Deferred Taxes	4	(49,014,308)	[3] - [4]
	\$	895,771	ARMIS Report 43-01 Table III, Row 401, Col. (b) + 404, Col. (b)
	\$	(49,910,079)	[5] - [6]
	\$	438.00	[3] / [11]
ossarm Allowance		5%	FCC default
oss Pole Cost less Crossarm Allowance	\$	416.10	[8] * (1 - [9])
mber of Distribution Poles		341,169	ARMIS Report 43-01 Table III, Row 601, Col. (b)
	II.	Carrying Charge	
·			Source
preciation Rate for Poles		8.00%	ARMIS Report 43-01 Table III, Row 301, Col. (b)
tal General and Administrative	Ś	295.387.636	ARMIS Report 43-01 Table III, Row 503, Col. (b)
	,		[13] / [1]
		2.3370	[-0]/[-]
sintenance of Overhead Lines	\$	7 202 751	ARMIS Report 43-01 Table III, Row 501, Col. (b)
			ARMIS Report 43-01 Table III, Row 501.2, Col. (b)
·	*		([15] - [16]) / [3]
eration and ivialintenance nate		2.11/0	([23] [23]), [3]
erating Taxes	\$	315,729,989	ARMIS Report 43-01 Table III, Row 504, Col. (b)
« Rate		3.14%	[18] / [1]
thorized Rate of Return		10.875%	FCC default
justed Rate of Return (Gross Method)		-3.63%	[20] * [7] / [1]
tal Carrying Charge Rate		12 55%	[12] + [14] + [17] + [19] + [21]
	Bare		
Description		· •	Source
nual Pole Cost	\$	52.22	[10] * [22]
oan Service Area Allocation		0.66	FCC default
t Cost of Bare Pole - Urban	\$	34.46	[23] * [24]
ace Occupied by Attachment (ft.)		10.5	FCC default
usable Share Factor		0.667	FCC default
tal Unusable Space (ft.)		24	FCC default
erage Pole Height		37.5	FCC default
tal Usable Space		13.5	[29] - [28]
mber of Attaching Entities		5	FCC default (urban)
-			{[26] + ([27] * [28]) / [31]} / [29]
300 (400)		30.33/6	([20] - ([21] - [20]) / [31]] / [23]
w Telecom Rate	\$	12.59	[25] * [32]
			[23] * [32]
tamilee ek thiu ta noat w	Rate horized Rate of Return usted Rate of Return (Gross Method) al Carrying Charge Rate III. Net Cost of a Description ual Pole Cost an Service Area Allocation Cost of Bare Pole - Urban ce Occupied by Attachment (ft.) usable Share Factor al Unusable Space (ft.) rage Pole Height al Usable Space nber of Attaching Entities ce Factor	Description reciation Rate for Poles al General and Administrative \$ ininistrative and General Rate Intenance of Overhead Lines \$ e Rental Expense \$ eration and Maintenance Rate Prating Taxes \$ Rate Interaction Rate of Return \$ interaction Rate of Return \$	Description reciation Rate for Poles al General and Administrative shinistrative and General Rate 2.93% Intenance of Overhead Lines Rental Expense Apartion and Maintenance Rate 2.11% Pration and Maintenance Rate 3.14% Pration and Maintenance Rate 3.14% Pration and Rate of Return Pration and Rate of Return Pration and Rate of Return Pration Bare Pole, Space Factor III. Net Cost of a Bare Pole, Space Factor Description Pration Action Space Factor Action Bare Pole - Urban Action Bare

2018 Per-Pole Rate for Potomac Edison's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults

	Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults I. Net Investment per Distribution Pole								
	2017 Data								
Line #	Description	(Gross Method	Source					
1	Total Distribution Plant	\$	10,293,895,380	ARMIS Report 43-01 Table III, Row 100, Col. (b)					
2	Accumulated Depreciation - Distribution	\$	9,060,417,354	ARMIS Report 43-01 Table III, Row 200, Col. (b)					
3	Gross Pole Investment	\$	154,288,453	ARMIS Report 43-01 Table III, Row 101, Col. (b)					
4	Depreciation Reserve (Poles)	\$	210,493,418	ARMIS Report 43-01 Table III, Row 201, Col. (b)					
5	Depreciation Reserve (Poles)	\$	(56,204,964)	[3] - [4]					
6	Net Deferred Taxes Allocated to Distribution	\$	951,654	ARMIS Report 43-01 Table III, Row 401, Col. (b) + 404, Col. (b)					
7	Net Plant less Deferred Taxes	\$	(57,156,618)	[5] - [6]					
8	Gross Pole Investment	\$	454.60	[3] / [11]					
9	Crossarm Allowance	Ţ	5%	FCC default					
10	Gross Pole Cost less Crossarm Allowance	\$	431.87	[8] * (1 - [9])					
11	Number of Distribution Poles	Ą	339,392	ARMIS Report 43-01 Table III, Row 601, Col. (b)					
1.1	Number of Distribution Foles	Ш	Carrying Charge						
Line #	Description		carrying charge	Source					
			8.00%	ARMIS Report 43-01 Table III, Row 301, Col. (b)					
12	Depreciation Rate for Poles		8.00%	ARMIS Report 43-01 Table III, Row 301, Col. (b)					
13	Total General and Administrative	\$	072 214 452	APMIC Papart 42 01 Table III Pays F02 Col (b)					
		Ş	872,314,453	ARMIS Report 43-01 Table III, Row 503, Col. (b)					
14	Administrative and General Rate		8.47%	[13] / [1]					
1.5	Maintenance of Overhead Lines	۲	7.052.041	ADMIC Depart 42 01 Table III Day F01 Cal (b)					
15		\$ \$	7,052,941	ARMIS Report 43-01 Table III, Row 501, Col. (b)					
16	Pole Rental Expense	Ş	4,097,259	ARMIS Report 43-01 Table III, Row 501.2, Col. (b)					
17	Operation and Maintenance Rate		1.92%	([15] - [16]) / [3]					
18	Operating Taxes	\$	183,726,937	ARMIS Report 43-01 Table III, Row 504, Col. (b)					
19	Tax Rate	,	1.78%	[18] / [1]					
				[]/ [-]					
20	Authorized Rate of Return		10.625%	FCC default					
21	Adjusted Rate of Return (Gross Method)		-3.94%	[20] * [7] / [1]					
	,								
22	Total Carrying Charge Rate		16.24%	[12] + [14] + [17] + [19] + [21]					
	III. Net Cost of a	Bare	Pole, Space Facto	or, and Rate Calculation					
Line #	Description			Source					
23	Annual Pole Cost	\$	70.13	[10] * [22]					
24	Urban Service Area Allocation		0.66	FCC default					
25	Net Cost of Bare Pole - Urban	\$	46.29	[23] * [24]					
26	Space Occupied by Attachment (ft.)		10.5	FCC default					
27	Unusable Share Factor		0.667	FCC default					
28	Total Unusable Space (ft.)		24	FCC default					
29	Average Pole Height		37.5	FCC default					
30	Total Usable Space		13.5	[29] - [28]					
_	•		- -						
31	Number of Attaching Entities		5	FCC default (urban)					
32	Space Factor		36.53%	{[26] + ([27] * [28]) / [31]} / [29]					
33	New Telecom Rate	\$	16.91	[25] * [32]					
34	Pre-Existing Telecom Rate	\$	25.62	[23] * [32]					

2019 Per-Pole Rate for Potomac Edison's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (GAAP Accounting), FCC Defaults

	I. I	Net Inv	estment per Dist	ribution Pole							
	2018 Data										
Line #	Description		Net Method	Source							
1	Total Distribution Plant	\$	9,140,372,876	ARMIS Report 43-01 Table III, Row 100, Col. (b)							
2	Accumulated Depreciation - Distribution	\$	6,354,966,906	ARMIS Report 43-01 Table III, Row 200, Col. (b)							
3	Gross Pole Investment	\$	191,419,139	ARMIS Report 43-01 Table III, Row 101, Col. (b)							
4	Depreciation Reserve (Poles)	\$	106,374,432	ARMIS Report 43-01 Table III, Row 201, Col. (b)							
5	Net Pole Plant	\$	85,044,707	[3] - [4]							
6	Net Deferred Taxes Allocated to Distribution	\$	8,062,699	ARMIS Report 43-01 Table III, Row 401 + 404, Col. (b)							
7	Net Plant less Deferred Taxes	\$	76,982,008	[5] - [6]							
8	Gross Pole Investment	\$	227.96	[3] / [11]							
9	Crossarm Allowance		5%	FCC default							
10	Net Pole Cost less Crossarm Allowance	\$	216.56	[8] * (1 - [9])							
11	Number of Distribution Poles	\$	337,696	ARMIS Report 43-01 Table III, Row 601, Col. (b)							
		II. Cap	oital Carrying Cha								
Line #	Description			Source							
12	Depreciation Rate for Poles		19.89%	ARMIS Report 43-01 Table III, Row 301, Col. (b) * [3] / [7]							
13	Total General and Administrative	\$	232,785,253	ARMIS Report 43-01 Table III, Row 503, Col. (b)							
14	Administrative and General Rate	Ψ.	9.70%	[13] / [A4]							
1 -	Transmission and General Nate		3.7070	[20]/[///]							
15	Maintenance of Overhead Lines	\$	6,017,449	ARMIS Report 43-01 Table III, Row 501, Col. (b)							
16	Pole Rental Expense	\$	4,074,499	ARMIS Report 43-01 Table III, Row 501.2, Col. (b)							
17	Operation and Maintenance Rate	Ý	2.52%	([15] - [16]) / [3]							
	operation and manneralise nate		2.52,0	((20) (20)), [0]							
18	Operating Taxes	\$	221,137,403	ARMIS Report 43-01 Table III, Row 504, Col. (b)							
19	Tax Rate		9.21%	[18] / [A4]							
20	Authorized Rate of Return		10.375%	FCC default							
21	Total Capital Carrying Charge Rate		51.70%	[12] + [14] + [17] + [19] + [20]							
	III. Net Cost of	a Bare	Pole, Space Fact	or, and Rate Calculation							
Line #	Description			Source							
22	Annual Pole Cost	\$	111.97	[10] * [21]							
23	Urban Service Area Allocation		0.66	FCC default							
24	Net Cost of Bare Pole - Urban	\$	73.90	[22] * [23]							
25	Space Occupied by Attachment (ft.)		10.5	FCC default							
26	Unusable Share Factor		0.667	FCC default							
	onasasie share racco.		0.007	r oo delada							
27	Total Unusable Space (ft.)		24.0	FCC default							
28	Average Pole Height		37.5	FCC default							
29	Total Usable Space		13.5	[28] - [27]							
30	Number of Attaching Entities		5	FCC default (urban)							
31	Space Factor		36.53%	{[25] + ([26] * [27]) / [30]} / [28]							
	•										
32	New Telecom Rate	\$	16.64	([24] * [31]) - [A5]							
33	Pre-Existing Telecom Rate	\$	25.21	[32] / 0.66							

	Additional Inputs and Calculations									
Additional injuts and Calculations										
	2018 Data									
Line #	Description		Net Method	Source						
A1	Gross Plant Investment	\$	9,140,372,876	ARMIS Report 43-01 Table III, Row 100, Col. (b)						
A2	Total State Depreciation	\$	6,354,966,906	ARMIS Report 43-01 Table III, Row 200, Col. (b)						
А3	Total Accumulated Taxes	\$	384,998,451	ARMIS Report 43-01 Table III Rows 403 + 406 Col (b)						
A4	Net Plant Investment	\$	2,400,407,519	[A1] - [A2] - [A3]						
A5	Implementation Rate Difference	\$	10.36	47 C.F.R. § 1.1406(e)						

Exhibit C-3

	Overpayment Calculation: Proportional New Telecom Rates									
			2017		2018		2019		Total	Source
1	Verizon's Net Rent Payment to Potomac Edison									Affidavit of S. Mills
2	Potomac Edison Poles Used By Verizon	_	79,592		79,434		79,264			Affidavit of S. Mills
3	Per-Pole New Telecom Rate	\$	5.97	\$	6.07	\$	6.05			Ex. C-1
4	Verizon's Gross Rent to Potomac Edison	\$	475,164	\$	482,164	\$	479,547	\$	1,436,876	[2] * [3]
5	Verizon Poles Used By Potomac Edison		21,666		21,654		21,634			Affidavit of S. Mills
6	Per-Pole New Telecom Rate	\$	12.59	\$	16.91	\$	16.64			Ex. C-2
7	Potomac Edison's Gross Rent to Verizon	\$	272,775	\$	366,169	\$	359,990	\$	998,934	[5] * [6]
8	Verizon's Net New Telecom Rent to Potomac Edison	\$	202,389	\$	115,995	\$	119,557	\$	437,942	[4] - [7]
9	Verizon's Overpayment to Potomac Edison at Proportional New Telecom Rates	I				I				[1] - [8]

	Overpayment Calculation: Proportional Pre-Existing Telecom Rates									
			2017		2018		2019		Total	Source
10	Verizon's Net Rent Payment to Potomac Edison									Affidavit of S. Mills
11	Potomac Edison Poles Used By Verizon		79,592		79,434		79,264			Affidavit of S. Mills
12	Per-Pole Pre-Existing Telecom Rate	\$	9.04	\$	9.20	\$	9.17			Ex. C-1
13	Verizon's Gross Rent to Potomac Edison	\$	719,512	\$	730,793	\$	726,506	\$	2,176,811	[11] * [12]
14	Verizon Poles Used By Potomac Edison		21,666		21,654		24,634			Affidavit of S. Mills
15	Per-Pole Pre-Existing Telecom Rate	\$	19.08	\$	25.62	\$	25.21			Ex. C-2
16	Potomac Edison's Gross Rent to Verizon	\$	413,387	\$	554,775	\$	621,023	\$	1,589,186	[14] * [15]
17	Verizon's Net Pre-Existing Telecom Rent to Potomac Edison	\$	306,124	\$	176,017	\$	105,483	\$	587,625	[13] - [16]
18	Verizon's Overpayment to Potomac Edison at Proportional Pre-Existing Telecom Rates	I		I						[10] - [17]

Exhibit C

Before the Federal Communications Commission Washington, DC 20554

VERIZON MARYLAND LLC,)
Complainant,)) Docket No.
v.) File No.
THE POTOMAC EDISON COMPANY,))
Defendant.))

AFFIDAVIT OF TIMOTHY J. TARDIFF, PH.D.

COMMONWEALTH OF MASSACHUSETTS)	
) s	SS.
COUNTY OF SUFFOLK)	

I, TIMOTHY J. TARDIFF, being sworn, depose and say:

I. Introduction

1. My name is Timothy J. Tardiff. My business address is 112 Water Street, Boston, MA 02109. I am a Principal at Advanced Analytical Consulting Group, Inc. I have specialized in telecommunications policy issues for over 35 years. I received a B.S. degree from the California Institute of Technology in mathematics (with honors) in 1971 and a Ph.D. in Social Science from the University of California, Irvine in 1974. My research has included the theoretical and applied aspects of methodologies used to establish regulated rates for, among other things, pole attachments and services identified in the Telecommunications Act of 1996; studies of the demand for telephone services, such as local measured service and toll; analysis of the market potential for new telecommunications products and services; assessment of the growing competition for telecommunications services; and evaluation of regulatory frameworks consistent with the growing competitive trends. I have published articles in the regulatory economics literature, which in recent years have focused on policies for the increasingly competitive telecommunications industry.

- 2. I have participated in numerous legal and regulatory proceedings on issues of telecommunications economics and regulation. Since the passage of the Telecommunications Act of 1996, I have performed analyses, filed declarations and testimony, and/or appeared as a witness in pole attachment disputes, interconnection arbitrations, unbundled network element proceedings, universal service investigations, applications by incumbent local exchange carriers for authorization to provide interLATA long-distance, and implementation of the Triennial Review Order rules for unbundling network elements in over 25 states and before the Federal Communications Commission ("FCC"). Most recently, I have participated in regulatory and legal proceedings related to broadband competition issues. In particular, I have advised telecommunications clients, filed economic analyses, and written articles on topics such as (1) rates for the use of network infrastructure such as utility poles to facilitate the efficient provision of broadband services, (2) rates for the exchange of traffic between landline carriers that avoid uneconomic arbitrage opportunities and encourage efficient investment in telecommunications networks, and (3) development of an analytical framework for determining whether incumbents' high capacity (e.g., special access and broadband Internet access) services face enough competition to justify relaxed regulation or effective deregulation.
- 3. Between 2013 and 2016, I filed affidavits in support of pole attachment complaints filed by Verizon Florida LLC against Florida Power and Light Company (File No. EB-15-MD-006, Docket No. 15-190) and by Verizon Virginia LLC and Verizon South Inc. against Virginia Electric and Power Company d/b/a Dominion Virginia Power (File No. EB-15-MD-002, Docket No. 15-73), as well as in support of pole attachment complaints filed by subsidiaries of Frontier Communications Corporation against subsidiaries of Duke Energy Corporation (File Nos. EB-13-MD-007, EB-14-MD-001, and EB-14-MD-002, Docket Nos. 14-213, 14-214, 14-215), UGI Utilities, Inc.—Electric Division (File No. EB-14-MD-007, Docket No. 14-217), and subsidiaries of FirstEnergy Corporation (File No. EB-14-MD-008, Docket No. 14-218). I am also filing an affidavit in support of a related pole attachment complaint filed by Verizon Pennsylvania LLC and Verizon North LLC against Pennsylvania subsidiaries of the FirstEnergy Corporation: Metropolitan Edison Company, Pennsylvania Electric Company, and Penn Power Company.

- 4. My international research and consulting experience includes studies and expert reports on telecommunication competition and interconnection issues in Canada, Japan, New Zealand, Peru, Thailand, Australia, the Commonwealth of the Northern Mariana Islands, and Trinidad and Tobago. I attach a copy of my full resume as Exhibit T-1.
- 5. The purpose of this affidavit is to detail my conclusion that the pole attachment rental rates that The Potomac Edison Company ("Potomac Edison") has charged and continues to charge Verizon Maryland ("Verizon") are unjust and unreasonable. I also explain my conclusion that a proper application of the FCC's new telecom formula produces the just and reasonable and competitively neutral rate for Verizon's attachments to Potomac Edison's joint use poles consistent with the FCC's 2011 and 2018 Orders. I enumerate flaws with Potomac Edison's unsupported and unfounded assertion that Verizon enjoys net material benefits over its competitors that would justify a departure from the new telecom rate. ²
- 6. In particular, the net pole attachment rental charges that Potomac Edison invoiced and Verizon paid under the current agreement for 2019 were about percent as large as net payments produced by the just and reasonable rates that result from proper application of the FCC's new telecom rate formulas (\$0.120 million). Potomac Edison's substantial overcharge was not unique to the 2019 rental year, as Potomac Edison's overcharges have averaged approximately per year during the 2017 to 2019 rental years at issue in Verizon's complaint. Potomac Edison's charging of these rental rates in spite of the FCC's Orders reflects Potomac Edison's exercise of the superior bargaining power it possesses as a result of its owning about 79 percent of the joint use poles in the service territories at issue in this matter.

¹ Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment; Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment, WC Docket Nos. 17-84 and 17-79, Third Report and Order and Declaratory Ruling, 33 FCC Rcd 7705 ("2018 Order"); Implementation of Section 224 of the Act; A National Broadband Plan for Our Future, WC Docket No. 07-245; GN Docket No. 09-51, Report and Order on Reconsideration, 26 FCC Rcd 5240, ¶ 217 ("2011 Report and Order").

² See Email from David J. Karafa to Brian Trosper, June 7, 2018.

³ Affidavit of M. Calnon ¶ 21.

II. Economic Background

- 7. The FCC's 2018 Order updated the Commission's approach to ensuring that incumbent local exchange carriers ("ILECs") are charged just and reasonable rates for use of poles owned by investor-owned electric utilities. The Commission explained that the policy it adopted in 2011 that "similarly situated attachers should pay similar pole attachment rates for comparable access" had not achieved its intended goal because "electric utilities continue to charge [ILECs] pole attachment rates significantly higher than the rates charged to similarly situated telecommunications providers."
- 8. In its 2011 Report and Order, the Commission sought to enforce the right of ILECs to just and reasonable rates by providing guidance and establishing reference points for evaluating the rates charged to ILECs. Under the approach adopted in 2011, the FCC stated that if the terms and conditions in a new joint use agreement are materially comparable to corresponding terms and conditions in a third-party license agreement, the just and reasonable rate would be the same as the cable rate or new telecom rate that applies to the comparable cable or telecommunications provider.⁵ If the terms and conditions of the new joint use agreement instead materially advantage the ILEC (*relative to third party attachers*), the pre-existing (or old) telecom rate served as an upper bound reference point for the just and reasonable rate.⁶ For existing joint use agreements, the Commission would also consider whether the rates were negotiated by parties with relatively equal bargaining power (with relative pole ownership being a key indicator) and whether the ILEC generally lacked the ability to terminate the rates and achieve new, just and reasonable rates through negotiations. In applying this framework to an existing joint use agreement that the electric utility claimed had terms that were competitively advantageous to the ILEC, the Enforcement Bureau

⁴ 2018 Order, ¶ 123.

⁵ 2011 Report and Order, ¶ 217.

⁶ For areas that are urbanized within the Commission's rules, which I understand includes the service areas of Potomac Edison, the FCC intended the pre-existing telecom rate to be approximately 50 percent higher than the new telecom rate. In particular, for urbanized areas, the new telecom rate formula includes a 0.66 cost allocator that leads to a new telecom rate that is 0.66 times the pre-existing telecom rate. 47 C.F.R. § 1.1406(d)(2). Therefore, the pre-existing telecom rate is (1/0.66 = 1.52) x the new telecom rate.

- requested a quantification of the net monetary value of those terms before it would set the just and reasonable and competitively neutral rate to be charged the ILEC.⁷
- 9. The Commission anticipated that electric utilities would negotiate just and reasonable rates using the guidance provided by the 2011 Report and Order. Instead, the Commission received evidence that electric utilities had failed to do so. As a result, in the 2018 Order, the Commission (1) established the new telecom rate as the presumptive just and reasonable rate for "new and newly renewed" agreements, unless the electric utility can establish by clear and convincing evidence that the agreement provides net material advantages to the ILEC relative to third party attachers, and (2) determined that, if the electric utility can meet this standard, the pre-existing telecom rate is a hard cap on the rate that may be charged the ILEC, instead of a reference point. Accordingly, proper calculation of the new and pre-existing (old) telecom rates is of great importance as the new telecom rate presumptively applies and the electric utility cannot lawfully charge more than the pre-existing telecom rate for new and newly renewed agreements. On the rate of the pre-existing telecom rate for new and newly renewed agreements.

III. Calculating Just and Reasonable Rates

10. Under the 2018 Order, the threshold question is whether the electric utility charges an ILEC a rate higher than the presumptively reasonable new telecom rate. The FCC's new telecom rate formula boils down to the following common-sense propositions: (1) determine how

⁷ Verizon Florida LLC, Complainant v. Florida Power and Light Company, Respondent, Docket No. 14-216, File No. EB-14-MD-003, Memorandum Opinion and Order, 30 FCC Rcd 1140, ¶¶ 23 and 26.

⁸ 2018 Order, ¶ 123 and note 459.

⁹ 2018 Order, ¶¶ 126-129.

¹⁰ 2018 Order, ¶ 127. Note 475 defines "new or newly renewed" agreement as "one entered into, renewed, or in evergreen status after the effective date of this Order, and renewal includes agreements that are automatically renewed, extended, or placed in evergreen status." This definition appropriately captures agreements that predate the 2018 Order because, as an economic matter, there is little if any distinction between a disputed rate in a newly executed agreement and the insistence by an electric utility that an ILEC continue to pay disputed rates under an existing agreement that has been in effect for a number of years. Under a principle of competitive neutrality, evaluation of the reasonableness or unreasonableness of the rate does not change based on the age of the terms and conditions to which it is attached, but on whether those terms and conditions provide an advantage relative to those in actual license agreements between the electric utility and the ILEC's competitors. Had the FCC excluded existing agreements from the standard set forth in the 2018 Order (or the 2011 Report and Order), it would have created improper incentives for an electric utility with superior bargaining power, as it would be advantaged by refusing to agree to a new agreement, and by otherwise inhibiting, complicating, and/or lengthening the duration of the negotiation process. This, in turn, would perpetuate outdated agreements and rate disparities, in contravention of the Commission's stated objective.

much it costs a pole owner to provide space on its poles for itself and other attaching entities each year and (2) assign a portion of that total cost to each attaching entity. The FCC designed the new telecom formula so that, with default inputs, it produces a pole attachment rate for a telecommunications provider that recovers virtually the same percentage (7.4 percent) of the annual pole cost that the cable rate recovers.¹¹

A. Annual Pole Costs

11. The total annual pole costs included in the new telecom rate calculation are analogous to the costs that an office building owner would need to charge individual tenants—including itself if the owner occupied space in the building—so that the total rent (including the building owner's rent) would recover the annual investment in the building (*e.g.*, cover the owner's cost of investing in the purchase and improvement of the building)¹² plus any associated annual "out-of-pocket" operating and maintenance costs.¹³ To achieve this result, the annual pole costs included in the new telecom rate calculation: (1) calculate the net investment per pole for the pole owner's stock of poles and (2) multiply the net investment per pole by an annual charge factor (carrying charge factor).¹⁴ A cost allocator is then applied based on the average number of attaching entities on the pole owner's poles.¹⁵

¹¹ Specifically, annual pole cost is defined in 47 C.F.R. § 1.1406(d) as the net cost of a bare pole times the carrying charge rate times a cost allocator designed to rationalize rates across geographic areas. The cost allocator produces a rate virtually the same as the cable rate, which with default inputs equals 7.4 percent of the net cost of a bare pole times the carrying charge rate.

¹² In this stylized example, the cost of investing in the purchase and improvement of a building is analogous to the recovery of depreciation and cost of capital in a regulated rate.

¹³ The FCC's carrying charge rate is the sum of five specific components: (1) administrative, (2) maintenance, (3) depreciation, (4) taxes, and (5) rate of return. *Implementation of Section 703(e) of the Telecommunications Act of 1996*, CS Docket No. 97-98; CS Docket No. 97-151, Consolidated Order on Reconsideration, 16 FCC Rcd 12103 (2001), Appendices E-1 and E-2 ("Reconsideration Order"), available at https://www.fcc.gov/edocs/search-results?t=quick&dockets=97-98. The first two components are analogous to "out-of-pocket" expenses and the last three recover the owner's investment in pole facilities.

¹⁴ There are two possible cases where only "out-of-pocket" costs would be included in calculating new telecom rates. First, when maintenance costs exceed a certain percentage of total annual pole costs (*e.g.*, 66 percent in urbanized areas and 44 percent in non-urbanized areas), the new telecom rate is based only on administrative and maintenance expenses. *See* 47 C.F.R. § 1.1406(d)(ii). Second, in a 2017 Order, the FCC amended its rules to exclude capital costs in calculating pole attachment rates if they are otherwise recovered in non-recurring charges, such as make-ready fees. *See Accelerating Wireline Broadband Deployment by Removing Barriers to Infrastructure Investment*, WC Docket No. 17-84, Report and Order, Declaratory Ruling, and Further Notice of Proposed Rulemaking, 36 FCC Rcd 11128, ¶¶ 7-8. The Order added the following language to the end of 47 C.F.R.

- 12. The FCC has identified the calculations and inputs needed to calculate net investment per pole, the annual charge factor, and the cost allocator. Most of the specific inputs are directly available from FERC Form 1 accounts for calculating rates for use of poles owned by electric utilities and ARMIS accounts for calculating rates for use of poles owned by ILECs. In addition, three categories of inputs for electric utilities require reasonable allocations from accounts that include assets other than utility poles. These are (1) accumulated depreciation for poles, which requires an allocation of an accumulated depreciation account that includes all distribution facilities, of which distribution poles are one of nine specific categories, (2) deferred taxes, which are reported for all electric facilities in the FERC 1 data, and (3) maintenance expense, for which distribution poles are one of three categories for which maintenance of overhead lines is reported.
- 13. I reviewed the new telecom rate calculations that Verizon performed for poles owned by Potomac Edison, ¹⁷ and they reasonably assign the amounts in the broader categories as follows:

Accumulated Depreciation. The proportion of the accumulated depreciation for distribution assigned to poles equals the ratio of gross investment (plant in service) for poles to the gross investment for distribution facilities. Both gross investment amounts are available in FERC Form 1.

Deferred Taxes. The proportion of the deferred taxes for all electric facilities assigned to poles equals the ratio of gross investment minus accumulated depreciation (from the previous step) for poles to gross investment for electric facilities minus the corresponding accumulated depreciation for all electric facilities. The gross investment and accumulated depreciation amounts for electric facilities are available in FERC Form 1. ¹⁸

^{§ 1.1406(}b): "The Commission shall exclude from actual capital costs those reimbursements received by the utility from cable operators and telecommunications carriers for non-recurring costs."

¹⁵ 47 C.F.R. § 1.1406(d)(2)(i).

¹⁶ Reconsideration Order, Appendices E-1 and E-2 and 47 C.F.R. § 1.1406(d)(2)(i).

¹⁷ Affidavit of M. Calnon, Exhibit C-1.

¹⁸ The assignment of total deferred tax amounts based on net investment is equivalent to how states that do not include deferred taxes in the rate base, e.g., Florida, adjust the rate of return. In particular, the rate of return in such

Maintenance Expense. The proportion of overhead line maintenance expenses assigned to poles equals the ratio of net investment for poles to net investment for overhead lines, where net investment equals gross investment minus accumulated depreciation minus deferred taxes. The gross investment amounts for overhead lines are available in FERC Form 1. For the accumulated depreciation amounts for overhead lines, the proportion of the distribution accumulated depreciation assigned to overhead lines equals the ratio of gross investment for overhead lines (Accounts 364, 365, and 369) to the gross investment for distribution facilities. Both gross investment amounts are available in FERC Form 1. The amount of the deferred taxes assigned to overhead line accounts equals the ratio of gross investment minus accumulated depreciation for overhead lines to gross investment for electric facilities minus the corresponding accumulated depreciation for all electric facilities.

Rate of Return and Other Inputs. In addition to the allocations of broader accounts, application of the FCC formulas also require (1) the count of distribution poles owned by the electric utility, which is not reported in FERC Form 1 data, but which is typically available from the electric utility and (2) the rate of return. The proper rate of return is the weighted cost of debt and equity, which has traditionally been based on the most recent rate of return authorized by a state regulatory body. When such information is publicly available and recent, its use in rate calculations is generally uncontroversial and economically sound. However, in certain cases, publicly available authorized rates of return may have been established at a time when the costs of debt and/or equity—the components of the rate of return—depart from their actual economic costs at a later date. For example, I understand proposed a 1993 rate of return of 9.68 percent from the Maryland Public Service Commission with a 2007 rate of return of 8.44 percent from Public Service Commission

states is reduced by the ratio of what the rate base would have been had the deferred tax reserve been included to the rate base without the deferred tax reserve.

¹⁹ Amendment of Rules and Policies Governing Pole Attachments, CS Docket No. 97-98, Report and Order, 15 FCC Rcd 6453, ¶ 74 (2000).

of West Virginia to produce a rate of return of 9.06 percent.²⁰ Because (1) the Maryland rate of return was established over fourteen years before the West Virginia rate of return and (2) the required return on investment should be very similar, if not identical, for Potomac Edison's operations across the two states, the West Virginia rate of return much more closely reflects current costs than does the average of the two rates of return. Indeed, between the 1993 Maryland and 2007 West Virginia proceedings, Potomac Edison's cost of debt had decreased from 8.2 percent to 6.78 percent²¹ and Potomac Edison decreased its cost of equity request from 12.75 percent to 11.75 percent.²² If the 1993 Maryland rate of return had been updated at that time with Potomac Edison's costs of debt and equity (and no other components were changed), the adjusted rate of return for Maryland around 2007 would have been 8.55 percent, or nearly identical to the 8.44 rate of return ordered by the West Virginia Commission that year.²³ Potomac Edison's rate of return has decreased further during the last decade. In a West Virginia rate case that was settled in early 2015, ²⁴ Potomac Edison requested a rate of return of 8.08 percent²⁵ while the Commission Staff's recommended rate was 6.96 percent, ²⁶ resulting in an average rate of return of 7.52 percent. And in 2019, the Maryland Public Service Commission adopted a 7.15 percent rate of return for Potomac Edison, which Verizon appropriately combines with the 8.44 percent West Virginia rate of return when calculating rates for the 2019 rental year.²⁷ Verizon's calculation of rates for the 2017

²⁰ Maryland Public Service Commission, Order No. 8469, Case No. 8469, February 24, 1993, p. 25; West Virginia Public Service Commission, Commission Order, Case No. 06-0960-E-42, May 22, 2007, p. 48.

²¹ Reply Brief of Monongahela Power Company and the Potomac Edison Company, Case No. 06-0960-E-42, April 5, 2007, p. 24 and Maryland Order No. 8469, p. 25.

²² Maryland Public Service Commission, Order No. 8469, Case No. 8469, February 24, 1993, p. 22; West Virginia Public Service Commission, Commission Order, Case No. 06-0960-E-42, May 22, 2007, p. 41.

 $^{^{23}}$ In the Maryland order, debt was 48.5 percent and common equity 43.8 percent of the capital structure. Therefore, a 1.42 percentage point reduction in the cost of debt (from 8.2 percent to 6.78 percent) and a 1 percentage point reduction in the cost of equity would lower the rate of return by 1.42 percentage points x 0.485 + 1 percentage point x 0.438, which equals 1.13 percentage points.

²⁴ West Virginia Public Service Commission, Commission Order, Case No. 14-0702-E-42, February 3, 2015. The order approving the settlement did not disclose a rate of return.

²⁵ Testimony of Steven R. Staub, West Virginia Public Service Case No. 14-0702-E-42-T, June 6, 2014, p. 5.

²⁶ Testimony of Josh Allen, West Virginia Public Service Case No. 14-0702-E-42-T, October 6, 2014, p. 3.

²⁷ Maryland Public Service Commission, Order No. 89072, Case No. 9490, March 22, 2019, p.77.

and 2018 rental years using the outdated 9.06 percent average rate of return thus is conservative in that it artificially increases the new telecom rates that Verizon would pay for use of Potomac Edison's poles.

B. Share of Annual Pole Costs Charged to Attaching Entities (Space Factor)

14. The FCC's new telecom rate formula assigns annual pole costs as follows: ²⁸

$$Space\ Factor = \frac{Space\ Occupied\ +\ \frac{2}{3}\ \frac{Unusable\ Space}{Average\ Number\ of\ Attachers}}{Pole\ Height}.$$

Accordingly, the inputs needed to calculate the space factor are (1) the average amount of space occupied by an attacher, (2) the average height of the utility poles, (3) the average amount of total space that cannot be used for attachments (unusable space), and (4) the average number of entities (including the pole owner) attached to the poles. The FCC's rules include presumptions for these inputs, which are: (1) one foot occupied by a telecommunications attacher, (2) 37.5-foot average pole height, (3) 24 feet of unusable space, and (4) five attaching entities if any part of the utility's service area in the state is urbanized. Using these presumptions, the space factor is 0.1120, or 11.2 percent.²⁹ Verizon correctly used this value when calculating new telecom rates for use of Potomac Edison's poles.

IV. Potomac Edison's Unjust and Unreasonable Rates

- 15. The "big picture" is summarized in Table 1 below, which shows the parties' disparate pole ownership numbers and their impact on the rental rates paid by Verizon. In particular, the table includes:
 - (1) the disparate pole ownership shares of each of the parties. Potomac Edison own 78.6 percent of the joint use poles in the common territory with Verizon. That is, Potomac Edison owns almost four times the number of joint use poles as does Verizon.
 - (2) the net annual rental payment Verizon made to Potomac Edison, which totaled for the 2019 rental year.

²⁸ 47 C.F.R. § 1.1406(d)(2)(i).

²⁹ Reconsideration Order, ¶¶ 47-48.

- (3) the "net payment per net pole" that Verizon's net rental payments to Potomac Edison reflect for the 2019 rental year. I calculated this "net payment per net pole" by dividing Verizon's net rental payment by the number of Potomac Edison poles used by Verizon less the number of Verizon poles used by Potomac Edison. In particular, for the 2019 rental year Potomac Edison charged Verizon per pole rates that are disproportionately high relative to the rates it paid for use of far more space on Verizon's poles. ^{30 31}
- (4) the percentage of annual pole cost accounted for by Verizon's net payments, based on the annual pole costs from Verizon's proposed rate calculations.³²
- 16. Table 1 presents the results of the calculations described above. The overall results are as follows: (1) 2019 rates produced net payments from Verizon to Potomac Edison that are about times as high as net payments produced by just and reasonable and proportional new telecom rates; (2) Potomac Edison's annual overcharges have resulted from Potomac Edison's exercise of the superior bargaining power it has due to its ownership of almost four joint use poles for every one joint use pole owned by Verizon, and (3) Potomac Edison has collected from Verizon a substantially larger percentage of Potomac Edison's

per pole per year to attach to Potomac Edison's poles, while Potomac Edison paid per pole per year for attaching to Verizon's poles. While the "net payment per net pole" calculation provides a common framework for comparing payments that result from disparate rates levels and structures, the calculation understates the unreasonableness of the rates that Potomac Edison charges Verizon because it treats Potomac Edison's use of Verizon's poles as equivalent to Verizon providing an in-kind payment for the same number of poles. Potomac Edison, however, uses far more space on a joint use pole than Verizon uses and the Commission anticipated that electric utilities would pay a proportional rate given their greater space requirements. 2011 Report and Order ¶ 218 and note 662.

In particular, the 1959 agreement between Potomac Edison and the Chesapeake and Potomac Telephone of Maryland assigns 8 feet of space to Potomac Edison (not including the safety space) and 3 feet to Verizon, even though Verizon does not require that amount of space. See Affidavit of S. Mills ¶ 39. Therefore, Verizon pays about times as much per foot of assigned space as Potomac Edison pays times as much per foot of assigned space as Potomac Edison pays. As the Enforcement Bureau's Order in the dispute between Verizon and Dominion Virginia Power observed, this type of discrepancy is an indication of the electric utility's superior bargaining power and the unreasonableness of the rates charged Verizon. Verizon Virginia, LLC and Verizon South, Inc., Complainant v. Virginia Electric and Power Company d/b/a Dominion Virginia Power, Respondent, Proceeding No. 15-190, Bureau ID No. EB-15-MD-006, Order, 30 FCC Rcd 1140, ¶ 13 ("Dominion Order") The ratio of Verizon's per-foot rate to First Energy's would be even higher than if the safety space, which the FCC has a number of times explained is usable space that electric utilities in fact use, was added to FirstEnergy's assigned space. See for example, Amendments of Rules and Policies Governing Pole Attachments, CS Docket No. 97-98, Report and Order, 15 FCC Rcd 6453, ¶ 20-22 (2000), which is a 2000 Report and Order that confirms the safety space determination made in FCC orders from the 1970s.

³² Affidavit of M. Calnon, Ex. C-1. In Table 1, annual pole cost equals the net cost of a bare pole times the carrying charge rate.

pole cost (percent)³³ than is covered by the rates charged Verizon's competitors (7.4 percent)—a result that violates the Commission's competitive neutrality principle.

Table 1: 2019 Net Payments from Verizon to Potomac Edison³⁴

I. 2019 Rates		
Verizon on Potomac Edison poles	79,264	
Potomac Edison on Verizon poles	21,634	
Total Joint Use Poles	100,898	
Potomac Edison Ownership	78.6%	
Net Payment		
Per Net Pole		
Pole Cost		
Verizon cost share		
II. New Telecom Rates (based on 2018 FERC		
and ARMIS Costs)		
Verizon on Potomac Edison Rate	\$6.05	
Potomac Edison on Verizon Rate	\$16.64	
Net Payment	\$119,557	

17. The top of Table 1 shows that Potomac Edison charged Verizon a 2019 net rental amount of per net pole, 35 when Potomac Edison's annual pole cost was

Therefore, Potomac Edison recovered from Verizon about percent of Potomac Edison's annual pole cost for 2019, which is about times the 7.4 percent share of annual

This percent is the percentage of pole cost that Verizon pays for each pole in excess of the ones it pays for in-kind (i.e., by having Potomac Edison attachments on Verizon joint-use poles).

³⁴ Verizon has informed me that its FCC Reports 43-01, which provide inputs for the calculation of maximum rates Verizon can charge to other parties attaching to its poles, are based on generally accepted accounting principles (GAAP). Its FCC Reports 43-01 for previous years had been based on Part 32 Uniform System of Accounts (USOA) accounting. Accordingly, as specified in a 2017 FCC order, Verizon's proposed rates include an Implementation Rate Difference (IRD), which is subtracted from the rate that would be calculated by applying the FCC's pole attachment rate formulas to FCC Report 43-01 inputs based on GAAP accounting. The IRD is the difference in rates obtained by applying the pole attachment rate formulas to FCC Report 43-01 inputs based on GAAP and USOA accounting, respectively, for the last year in which an ILEC filed Forms 43-01 based on USOA accounting (the reports for 2017 for Verizon). 47 C.F.R. § 1.1406(e); Comprehensive Review of the Part 32 Uniform Systems of Accounts, WC Docket No. 14-130; Jurisdictional Separations and Referral to the Federal-State Joint Board, CC Docket No. 80-286, Report and Order, 32 FCC Rcd 1735, ¶ 36.

pole cost included in the FCC's new telecom and cable pole attachment rates.³⁶ In contrast, the bottom part of the table shows that the new telecom rates that Verizon calculated (\$6.05 per pole for Verizon's attachments to Potomac Edison's poles and \$16.64 per pole for Potomac Edison's attachments to Verizon's poles) would produce net payments of \$120 thousand,³⁷ *i.e.*, Verizon's 2019 net payment to Potomac Edison exceeded the net payment that just and reasonable rates produce by , which reflects the exercise of Potomac Edison's superior bargaining power from owning 79 percent of the joint use poles in the common territory that it shares with Verizon.

18. In summary, Table 1 illustrates that similar to the FCC's concerns in its Dominion Order, (1) Potomac Edison's pole ownership share of about 79 percent—which is larger than Dominion's ownership share of 65 percent³⁸—is a source of Potomac Edison's enjoying superior bargaining power. Further, despite the fact that Verizon should have paid about \$0.120 million in net 2019 pole attachment rent at properly calculated proportional just and reasonable rates, Potomac Edison argues that Verizon's net annual payment of is "just and reasonable" and "entitled to deference by the FCC"—even though it is higher than the net payment produced by proportional just and reasonable rates.³⁹

V. Comparative Advantages and Disadvantages in Agreement Terms

19. Under the 2018 Order, a rental rate higher than the new telecom rate for a "new or newly renewed" agreement requires clear and convincing evidence from the electric utility of net material benefits that advantage Verizon relative to the third-party attachers with which Verizon competes. Absent such evidence, the FCC's long-standing objective that pole

³⁶ With the FCC's default inputs, these rates are 7.4 percent of annual pole costs.

³⁷ The net payment of \$119,557 equals the number of Potomac Edison poles with Verizon attachments (79,264) x the corresponding rate (\$6.05 per pole) minus the number of Verizon poles with Potomac Edison attachments (21,634) x the corresponding rate (\$16.64 per pole).

³⁸ Dominion Order, ¶ 5.

³⁹ See Email from Stephen F. Schafer to James Slavin, May 11, 2018 and Email from David J. Karafa to Brian Trosper, June 7, 2018. Lowering the rates that Verizon pays to the hard cap of the pre-existing telecom rate (approximately 50 percent higher than the new telecom rates Verizon calculated for use of Potomac Edison's poles) and assigning Potomac Edison proportional pre-existing telecom rates for its use of Verizon's poles would produce a net 2019 pole attachment rental payment of \$0.181 million, lower than the Potomac Edison collected from Verizon.

attachment rates provide competitive neutrality would be undermined. Potomac Edison has not provided the required evidence. Instead, Potomac Edison and its three Pennsylvania affiliates provided only a list of alleged advantages, with no attempt to differentiate by company or quantify how much higher than the new telecom rate (if at all) a rate charged to Verizon would need to be to offset the purported advantages. Importantly, Potomac Edison and its affiliates have also not accounted for the significant costs that Verizon bears that its competitors do not.

- 20. The 2018 Order observed that "In the interest of promoting infrastructure deployment, the Commission adopted a policy in 2011 that similarly situated attachers should pay similar pole attachment rates for comparable access." The FCC's shifting of the burden of demonstrating and quantifying the value of alleged advantages to the electric provider and the establishment of a hard cap when such advantages have been demonstrated was motivated by the fact that the competitive neutrality objective established and explained in detail in the 2011 Report and Order has not been realized in practice.
- 21. The competitive neutrality objective articulated in the FCC's 2011 Report and Order was intended to create rate parity for all broadband providers by (1) revising the new telecom rate formula so that it produces a rate that approximates the rate resulting from the cable rate formula, (2) recognizing the statutory right of ILECs to just and reasonable rates, terms, and conditions to poles owned by investor-owned utilities, and (3) adopting a principle of competitive neutrality to define the rates that are just and reasonable for ILEC pole attachments. For example, in introducing the new telecom rate formula, the FCC observed that:⁴²

[T]he new formula will minimize the difference in rental rates paid for attachments that are used to provide voice, data, and video services, and thus will help remove market distortions that affect attachers' deployment decisions.

⁴⁰ Mr. Mills' affidavit describes how the items offered by Potomac Edison either provide no advantages relative to third party attachers and/or are offset by reciprocal benefits that Potomac Edison receives from Verizon under the joint use agreement.

⁴¹ 2018 Order, ¶ 123.

⁴² 2011 Report and Order, ¶ 126.

Removing these barriers to telecommunications and cable deployment will enable consumers to benefit through increased competition, affordability, and availability of advanced communications services, including broadband. Increasing competitive neutrality also improves the ability of different providers to compete with each other on an equal footing, better enabling efficient competition.

22. Competitive neutrality was also the economic rationale for specifying that just and reasonable rates for new agreements between electric utilities and ILECs be at parity with third-party rates when other terms and conditions are comparable:⁴³

Where incumbent LECs are attaching to other utilities' poles on terms and conditions that are comparable to those that apply to a telecommunications carrier or a cable operator—which generally will be paying a rate equal or similar to the cable rate under our rules—competitive neutrality counsels in favor of affording incumbent LECs the same rate as the comparable provider (whether the telecommunications carrier or the cable operator).

- 23. Similarly, to the extent that the terms and conditions of a joint use agreement are on a net basis materially advantageous to the ILEC relative to its competitors, the FCC noted that: "Just as considerations of competitive neutrality counsel in favor of similar treatment of similarly situated providers, so too should differently situated providers be treated differently."⁴⁴
- 24. The principle of competitive neutrality is particularly important in the context of pole attachments and broadband deployment. In the most general case, the principle of competitive neutrality (which is synonymous with competitive parity) amounts to the following proposition: when a particular input is essential (in this case pole attachments) for competition among providers of a downstream service (in this case broadband), then the prices charged for the essential input should neither favor nor disfavor particular providers of

⁴³ 2011 Report and Order, ¶ 217.

⁴⁴ 2011 Report and Order, ¶ 218.

- the downstream service (including the owner of the essential input if it competes for the downstream service).⁴⁵
- 25. A competitively neutral outcome is readily apparent when there are no net material differences between the terms and conditions of a pole attachment license agreement and a joint use agreement—namely, the same rental rate should be charged. When a provider does not enjoy a net material benefit as compared to its competitors, the total cost of providing broadband for each competitor is the sum of its cost of providing broadband on the facilities in its network plus the rental rates charged by the utility. Since the latter cost (the rental rate) must be the same under the FCC's competitive neutrality principle, competition among broadband providers would be based on comparative network costs.
- 26. In the event that an electric utility claims that a higher rate is justified because an ILEC enjoys net material benefits under a joint use agreement as compared to its competitors, there are several specific considerations in evaluating whether the alleged advantages justify charging the ILEC higher rental rates than third party attachers. A mere listing of purported advantages, with no quantification of how the advantages should flow to an annual rate differential, and ignoring the unique and substantial costs imposed on an ILEC, falls far short of "clear and convincing evidence" necessary to establish a net material advantage. 46
 - *First*, since possible relative advantages would be incorporated as a difference in the annual joint use and third party rental rates, the proper measure of cost is the total *annually recurring* cost advantage divided by the number of ILEC attachments. In this regard, statements of putative total cost advantages over some unspecified duration are meaningless. In particular, many of the putative advantages asserted by

[T]he purpose and effect of [the principles of competitive parity] are to ensure that the competition between the... supplier of the essential input and its actual or potential rivals is efficient. That is to say, rules framed in accordance with those principles should produce a distribution of responsibility for performing the contested function among the several rivals on the basis of their respective costs so as to minimize the total cost of supplying the contested service.

Kahn, A.E. and Taylor, W.E., "The Pricing of Inputs Sold to Competitors: A Comment," *Yale Journal on Regulation*, Volume 11, 1994, p. 227.

⁴⁵ Kahn and Taylor describe the principal of competitive parity as follows:

⁴⁶ For example, in response to Verizon's request "to monetize" any net material advantage, Potomac Edison and its Pennsylvania affiliates provided a list of alleged "competitive advantages" and stated only that it was "willing to discuss" them. *See* Email from David J. Karafa to Brian Trosper, June 7, 2018.

Potomac Edison in this matter and by electric utilities in general have been one-time charges and/or costs associated with new attachments, e.g., engineering, application, inspection fees, and any necessary make-ready work. To the extent that any of these provided a relative advantage to Verizon (which is not apparent), the one-time cost would need to be converted into an *annually recurring* value that is divided by the number of poles on which Verizon pays the rental rate to determine how much value the advantage has relative to an annually recurring rental rate. Because the proffered one-time costs are themselves generally quite low, the annually recurring per-pole value associated with such alleged benefit can be vanishingly small.⁴⁷

- Second, some of the terms that Potomac Edison alleges to be competitively advantageous are actually reciprocal provisions that are offset by comparable benefits that Verizon (but not its competitors) provides to Potomac Edison. For example, in enumerating terms such as bonds, insurance, and indemnity provision, ⁴⁸ Potomac Edison appears to have ignored the fact that Verizon has paid "in-kind" by providing mutual terms to Potomac Edison.
- *Third*, for work for which Potomac Edison may charge a third party, Verizon is not competitively advantaged if it incurs the cost to perform that work itself. In this regard, the FCC's Dominion Order observed: "Where Verizon performs a particular service itself and incurs costs comparable to its competitors in performing that service, we agree with Verizon that Dominion may not 'embed in Verizon's rental rate costs the Dominion does not incur."⁴⁹
- Fourth, some differences in agreement terms may have no (or even negative) value. For example, Potomac Edison lists the amount of space designated as communications space (but not reserved for Verizon's exclusive use) in the joint use agreement as a benefit. The space designations established decades ago are not a benefit now, if they ever were. Verizon has explained that it uses the same types of

⁴⁷ Affidavit of M. Calnon ¶ 25.

⁴⁸ Email from David J. Karafa to Brian Trosper, June 7, 2018.

⁴⁹ Dominion Order, ¶ 23.

facilities as its competitors today, and thus a comparable amount of space.⁵⁰ Further, not only does Verizon not need the amounts of space indicated in the agreement, but Verizon's competitors also attach in the space designated for Verizon.⁵¹ Insisting on terms that perpetuate outdated space allocations (and/or a cost-allocation formula that assumes occupancy of the unneeded space) is equivalent to a landlord requiring that a tenant pay for more space than it requires and then pocketing additional rents from another tenant occupying the unneeded space.

- *Fifth*, there can be minuses associated with differences in agreement terms that offset any alleged plus. For example, Potomac Edison claims that Verizon's occupying the lowest portion of the communications space provides an easy access advantage. ⁵² If true (and it is not apparent that it is given the close proximity of communications attachments), offsetting any such advantage is the greater danger that Verizon's attachments are damaged, e.g., by oversized vehicles. ⁵³ When (as Mr. Mills describes) the minuses are greater than any plus, the alleged advantage is a net disadvantage.
- Sixth, a difference in contractual "evergreen" provisions reflects a difference in statutory rights enjoyed by ILECs and third parties that is a competitive disadvantage for ILECs. In particular, since 1996, third party attachers (but not ILECs) have had a statutory right to access. As the FCC has previously explained, voluntary access is a unique disadvantage that an ILEC faces in deploying and upgrading its network. After the Commission implemented the statutory right of access for third parties specified in the 1996 Telecommunications Act, an electric utility tried to substantially increase rates to cable companies that had previously attached pursuant to voluntarily-entered agreements on the grounds that statutorily guaranteed access was more valuable than voluntarily granted access. The FCC rejected the attempt, but

⁵⁰ Affidavit of S. Mills ¶ 39.

⁵¹ Ibid.

⁵² Email from David J. Karafa to Brian Trosper, June 7, 2018.

⁵³ Affidavit of S. Mills ¶¶ 41-43.

only because it found that such an increase would be an exercise of monopoly power over an essential facility.⁵⁴

In light of the statutory right of access, evergreen provisions (which specify that existing attachments can remain on joint use poles at the rates in effect at the termination of an agreement)⁵⁵ would have little to no value to third parties, since they already have a right to be on poles. With respect to ILECs such as Verizon, evergreen provisions have been used to perpetuate the imbalance in rental payments and are an important contributor to Verizon's inability to terminate existing rental rate provisions and secure new just and reasonable rates.

• Finally, ILECs and third parties have attached to electric utility poles for decades. Accordingly, hypothetical costs that the electric utility would incur in providing attachments to ILECs and third parties, relative to what it would incur if only its attachments were on its poles are completely irrelevant to determining competitive parity. A rate would favor the ILEC only if the net (real world) costs incurred in providing pole attachments to ILECs were less than the costs for providing attachments to third parties. For the providing and cursory discussion of allegedly advantageous terms and conditions does not establish that Verizon would receive any competitive advantage (much less a net material advantage) were it to pay the same new telecom rate as its competitors.

⁵⁴ Alabama Cable Telecomms. Assocs. v. Alabama Power Co., 16 FCC Rcd 12209, ¶¶ 1 and 55 (2001).

⁵⁵ Email from David J. Karafa to Brian Trosper, June 7, 2018.

⁵⁶ For example, Florida Power and Light's June 29, 2015 Response to Verizon's Complaint, (Proceeding 15-73, p. iii), Alabama Power's Answer to AT&T's June 21, 2019 Complaint (Proceeding 19-119, p. 1), and Florida Power and Light's Brief in Support of its Answer to AT&T's September 16, 2019 Complaint (Proceeding 19-187, p. 25) claim that its poles are taller than they otherwise would be to accommodate joint use, resulting in the ILEC paying lower make-ready costs. When third parties attach to these joint use poles, they also benefit to a similar extent. Further, because third parties have also been attaching to poles for more than a half century, electric utilities have installed taller poles to accommodate third-party attachments, even when there are no ILEC attachments. Indeed, Florida's investor-owned utilities in a 2008 filing in the FCC's pole attachment proceeding clearly explained that their networks are designed to accommodate third party attachments: "Third party attachment standards...do not exist in a vacuum. They are part in parcel of an electric utility's overhead distribution construction standards." (Initial Comments of Florida Power and Light, Tampa Electric and Progress Energy Florida Regarding Safety and Reliability in WC Docket No. 07-245, March 7, 2008, p. 6.) In other words, electric utilities design their networks to accommodate other parties'—both ILECs and third parties'—attachments; therefore, costs that would prevail in a hypothetical world where no other parties used Potomac Edison's poles are of no economic relevance.

By:

Timothy J. Tardiff

Dated: November 19, 2019

Sworn to before me this 19th day of November, 2019.

youary 1 upile 132321211136 311

Exhibit T-1

Exhibit T-1

ADVANCED ANALYTICAL CONSULTING GROUP

Timothy J. Tardiff, Ph.D.

Principal

Advanced Analytical Consulting Group, Inc.

Office: (617) 338-2224 Direct: (617) 340-7872

Email: TimTardiff@AACG.com

Professional Summary

Dr. Timothy J. Tardiff has more than 30 years of academic and consulting experience. He has participated in numerous legal and regulatory proceedings regarding telecommunications, economics, intellectual property antitrust, and regulation issues. His research consulting, and expert witness experience in telecommunications has addressed pricing and costing issues involving increasingly competitive services, such as wireless and traditional wireline services. This experience has also included extensive examination and economic evaluation of all facets of the costing methodologies used to establish prices in rate-regulated industries—including expert reports and testimonies in a U.S. Department of Transportation proceeding on the reasonableness from an economic perspective of the rates international carriers at Los Angeles International Airport pay for use of terminal space. His work has included the telecommunications, software, transportation, energy, and public utility industries, and he has published extensively in economics, telecommunications, and transportation journals.

Dr. Tardiff is an economic consultant with clients in the telecommunications and regulated utilities industries. From 2006 to 2009, he was a Managing Director at Huron Consulting Group. Prior to joining Huron, Dr. Tardiff served as a vice president in the telecommunication practice at NERA Economic Consulting. During his career, he has served as the director of Marketing Research and senior member of the transportation practice at Charles River Associates, Inc. and assistant professor in the Department of Civil Engineering and Division of Environmental Studies at the University of California, Davis.

Dr. Tardiff's research has addressed the demand, cost, and competitive aspects of converging technologies, including wireless and broadband. He has evaluated pricing policies for increasingly competitive telecommunications markets, including appropriate mechanisms for pricing access services to competitors and studied actual and potential competition for services provided by incumbent telephone operating companies. Most recently, he has analyzed the effects of convergence and growing intermodal competition on whether incumbent firms should be considered dominant in the provision of certain services and the regulatory and antitrust implication of such determinations.

Since the passage of the United States Telecommunications Act, Dr. Tardiff has participated in interconnection arbitrations, unbundled element proceedings, universal service investigation, applications by incumbent local exchange carriers for authorization to provide interLATA long-distance, and implementation of the Triennial Review Order rules for unbundling network elements in over 25 states and before the United States Federal Communications Commission. His international research and consulting experience includes studies and expert reports on telecommunication competition issues in Canada, Japan, New Zealand, Peru, Australia, and Trinidad and Tobago, where he was an economic expert in an interconnection arbitration between two wireless carriers.

Education

- Ph.D., Social Sciences, University of California, Irvine, CA
- B.S., Mathematics, California Institute of Technology, Pasadena, CA

Testimony experience

- Reply Witness Statement of Dr. Timothy J. Tardiff on international interconnection rates, prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference Nos: 4/07/07/5 and 4/07/06/6, April 17, 2019.
- Witness Statement of Dr. Timothy J. Tardiff on international interconnection rates, prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference Nos: 4/07/07/5 and 4/07/06/6, February 25, 2019.
- Reply Comments of Timothy J. Tardiff on broadband deployment and availability, prepared for filing with the Federal Communications, Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, WC Docket No. 18-238, October 1, 2018.
- Reply Comments of Timothy J. Tardiff on broadband deployment and availability, prepared for filing with the Federal Communications, Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, WC Docket No. 17-199, October 6, 2017.
- Comments of Timothy J. Tardiff on trends in the availability of competitive broadband alternatives, prepared for filing with the Federal Communications, Restoring Internet Freedom, WC Docket No. 17-108, July 17, 2017.
- Deposition Testimony, Susan Mojica and Thomas Mojica, Individually and on behalf of others similarly situated v. Securus Technologies, Inc., Civil Action No. 5:14-cv-5258-TLB, U.S. District Court for the Western District of Arkansas, May 31, 2017.
- Expert Report, Susan Mojica and Thomas Mojica, Individually and on behalf of others similarly situated v. Securus Technologies, Inc., Civil Action No. 5:14-cv-5258-TLB, U.S.

District Court for the Western District of Arkansas, April 26, 2017 (Supplemental Report May 16, 2017).

- Deposition Testimony, Virginia Electric and Power Company d/b/a Dominion Virginia Power
 v. Verizon Virginia LLC and Verizon South Inc., Case No. CL15-3029-00, Virginia: In the Circuit
 Court of the County of Henrico, March 10, 2017.
- Expert Report, Walter Chruby, et al. v. Global Tel*Link Corporation, Civil Action No. 5:15-cv-05136-TLB, U.S. District Court for the Western District of Arkansas, February 16, 2016.
- Expert Rebuttal Report, Global Tel*Link Corporation ICS Litigation, Civil Action No. 5:14-cv-5275-TLB, U.S. District Court for the Western District of Arkansas, October 20, 2016.
- Expert Rebuttal Report, Susan Mojica, Individually and on behalf of others similarly situated v. Securus Technologies, Inc., Civil Action No. 5:14-cv-5258-TLB, U.S. District Court for the Western District of Arkansas, October 7, 2016.
- Deposition Testimony, Global Tel*Link Corporation ICS Litigation, Civil Action No. 5:14-cv-5275-TLB, U.S. District Court for the Western District of Arkansas, August 9, 2016.
- Deposition Testimony, Susan Mojica, Individually and on behalf of others similarly situated v. Securus Technologies, Inc., Civil Action No. 5:14-cv-5258-TLB, U.S. District Court for the Western District of Arkansas, July 12, 2016 and August 30, 2016.
- Expert Report, Susan Mojica, Individually and on behalf of others similarly situated v. Securus Technologies, Inc., Civil Action No. 5:14-cv-5258-TLB, U.S. District Court for the Western District of Arkansas, June 10, 2016.
- Expert Report, Global Tel*Link Corporation ICS Litigation, Civil Action No. 5:14-cv-5275-TLB, U.S. District Court for the Western District of Arkansas, June 9, 2016.
- Reply Affidavit of Timothy J. Tardiff on the economic evaluation of the monetary value of possible joint use agreement advantages, prepared for filing with the Federal Communications Commission on behalf of Verizon Virginia and Verizon South, Verizon Virginia LLC and Verizon South, Inc., Complainant v. Virginia Electric and Power and Light Company dba Virginia Dominion Power, Respondent, Docket No. 15-190, File No. EB-15-MD-006, February 9, 2016.
- Reply Affidavit of Timothy J. Tardiff on the economic evaluation of the monetary value of possible joint use agreement advantages, prepared for filing with the Federal Communications Commission on behalf of Verizon Florida, Verizon Florida LLC, Complainant v. Florida Power and Light Company, Respondent, Docket No. 15-73, File No. EB-15-MD-002, November 24, 2015.
- Affidavit of Timothy J. Tardiff on the economic evaluation of the monetary value of possible joint use agreement advantages, prepared for filing with the Federal Communications Commission on behalf of Verizon Virginia and Verizon South, Verizon Virginia LLC and Verizon South, Inc., Complainant v. Virginia Electric and Power and Light Company dba Virginia Dominion Power, Respondent, Docket No. 15-190, File No. EB-15-MD-006, August 3, 2015.

- Affidavit of Timothy J. Tardiff on the economic evaluation of the monetary value of possible joint use agreement advantages, prepared for filing with the Federal Communications Commission on behalf of Verizon Florida, Verizon Florida LLC, Complainant v. Florida Power and Light Company, Respondent, Docket No. 15-73, File No. EB-15-MD-002, March 13, 2015.
- Reply Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier Communications, Commonwealth Telephone Company d/b/a Frontier Communications Commonwealth Telephone Company and CTSI, LLC d/b/a Frontier Communications CTSI Company, LLC, Complainants v. UGI Utilities – Electric Division, Respondent, File No. EB-14-MD-007, September 15, 2014.
- Reply Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier Communications, Commonwealth Telephone Company LLC d/b/a Frontier Communications Commonwealth Telephone Company, Frontier Communications of Breezewood, LLC, Citizens Telecommunications Company of West Virginia d/b/a Frontier Communications Company of West Virginia, and Frontier West Virginia Inc., Complainants, v. Metropolitan Edison Company, Pennsylvania Electric Company, West Penn Power Company d/b/a Allegheny Power, Monongahela Power Company, and the Potomac Edison Company, Respondents, File No. EB-14-MD-008, July 31, 2014.
- Supplemental Expert Report, Duke Energy Carolinas, LLC, Plaintiff v. Frontier Communications of the Carolinas LLC, Defendant, 2:13-cv-00040-MR-DLH, U.S. District Court for the Western District of North Carolina, June 27, 2014.
- Deposition Testimony, Florida Power & Light Company, Plaintiff v. Verizon Florida LLC, Defendant, Case No. 13-014808-CA-01, Circuit Court of the Eleventh Judicial District in and for Miami-Dade County, Florida, June 24, 2014.
- Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier Communications, Commonwealth Telephone Company LLC d/b/a Frontier Communications Commonwealth Telephone Company, Frontier Communications of Breezewood, LLC, Citizens Telecommunications Company of West Virginia d/b/a Frontier Communications Company of West Virginia, and Frontier West Virginia Inc., Complainants, v. Metropolitan Edison Company, Pennsylvania Electric Company, West Penn Power Company d/b/a Allegheny Power, Monongahela Power Company, and the Potomac Edison Company, Respondents, File No. EB-14-MD-008, June 11, 2014.
- Expert Report, Florida Power & Light Company, Plaintiff v. Verizon Florida LLC, Defendant, Case No. 13-014808-CA-01, Circuit Court of the Eleventh Judicial District in and for Miami-Dade County, Florida, May 15, 2014.
- Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier Communications, Commonwealth Telephone Company d/b/a Frontier

- Communications Commonwealth Telephone Company and CTSI, LLC d/b/a Frontier Communications CTSI Company, LLC, Complainants v. UGI Utilities Electric Division, Respondent, File No. EB-14-MD-007, May 14, 2014.
- Expert Report, Duke Energy Carolinas, LLC, Plaintiff v. Frontier Communications of the Carolinas LLC, Defendant, 2:13-cv-00040-MR-DLH, U.S. District Court for the Western District of North Carolina, April 1, 2014.
- Reply Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier Communications of the Carolinas, Frontier Communications of the Carolinas, LLC, Complainant v. Duke Energy Carolinas, LLC, Defendant, File No. File No. EB-14-MD-002, March 20, 2014.
- Reply Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier Communications of the Carolinas, Frontier Communications of the Carolinas, LLC, Complainant v. Duke Energy Carolinas, LLC, Defendant, File No. File No. EB-14-MD-001, March 18, 2014.
- Expert Report, Tampa Electric Company, Plaintiff v. Verizon Florida LLC, Defendant, Civil Action No. 12-016349, Circuit Court, Hillsborough County, Florida, Civil Division, February 24, 2014.
- Reply Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier Communications of the Carolinas, Frontier Communications of the Carolinas, LLC, Complainant v. Duke Energy Progress, Inc., Defendant, File No. EB-13-MD-007, February 11, 2014.
- Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier Communications of the Carolinas, Frontier Communications of the Carolinas, LLC, Complainant v. Duke Energy Carolinas, LLC, Defendant, File No. No. EB-14-MD-002, January 29, 2014.
- Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier Communications of the Carolinas, Frontier Communications of the Carolinas, LLC, Complainant v. Duke Energy Carolinas, LLC, Defendant, File No. File No. EB-14-MD-001, January 17, 2014.
- Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier Communications of the Carolinas, Frontier Communications of the Carolinas, LLC, Complainant v. Duke Energy Progress, Inc., Defendant, File No. EB-13-MD-007, December 9, 2013.

- Deposition Testimony, Tri-County Electric Cooperative, Inc., Plaintiff v. GTE Southwest d/b/a Verizon Southwest, Defendant, Cause No. CV-10-1865, District Court, Parker County, Texas, 43rd Judicial District, September 11, 2013.
- Expert Rebuttal Report, Tri-County Electric Cooperative, Inc., Plaintiff v. GTE Southwest d/b/a Verizon Southwest, Defendant, Cause No. CV-10-1865, District Court, Parker County, Texas, 43rd Judicial District, August 30, 2013.
- Expert Report, Tri-County Electric Cooperative, Inc., Plaintiff v. GTE Southwest d/b/a Verizon Southwest, Defendant, Cause No. CV-10-1865, District Court, Parker County, Texas, 43rd Judicial District, August 21, 2013.
- Direct Testimony of Timothy J. Tardiff on antitrust and community impacts, prepared for filing with the Montana Commissioner of Securities and Insurance on behalf of the Office of the Commissioner of Securities and Insurance, Case No: INS-2012-238, February 8, 2013.
- Deposition Testimony, Montana Commissioner of Securities and Insurance Case No: INS-2012-238, February 1, 2013.
- Deposition Testimony, Texas Public Utility Commission Docket No. 38389, July 16, 2012.
- Affidavit of Timothy J. Tardiff on presumptive just and reasonable rates for pole attachments, prepared for filing with the Federal Communications Commission on behalf of Frontier West Virginia, Frontier West Virginia, Inc., Complainant v. Appalachian Power and Wheeling Power, Defendants, File No. EB-12-MD-004, June 22, 2012.
- Rebuttal Testimony of Timothy J. Tardiff on the rate for wholesale services provided to competitive local exchange carriers, prepared for filing with the Texas Public Utility Commission on behalf of AT&T Texas, Docket No. 38389, May 11, 2012.
- Affidavit of Timothy J. Tardiff on statistical sampling issues, on behalf of Albert Pecherek, M.D., Medicare Appeal Number: 1-691874218, ALJ Appeal No. 1-750870135, September 16, 2011.
- Expert Report, Qwest Communications Corporation, Complainant v. Farmers and Merchants Telephone Company, Defendant, File No. EB-07-MD-001, Federal Communications Commission, November 30, 2010.
- Affidavit of Timothy J. Tardiff on the reasonableness of dominant carrier regulation for fixed line services, Telecommunications Services of Trinidad and Tobago, Claimant and Telecommunications Authority of Trinidad and Tobago, Defendant, Claim No. CV2010-02389, High Court of Justice, Republic of Trinidad and Tobago, September 29, 2010.
- "The Economics of Access Stimulation: Economic Evaluation of the 'Fact Report' by Drs. Alan Pearce and W. Brian Barrett," ex parte filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 07-135, August 5, 2010.
- Statement of Timothy Tardiff on the regulation of retail local telephone services, prepared for filing with the Commonwealth Public Utilities Commission, Commonwealth of the

Northern Mariana Islands on behalf of the Micronesian Telecommunications Corporation, CPUC Docket No.09-3, July 30, 2010.

- Reply Declaration of Timothy J. Tardiff and Dennis L. Weisman on an analytical framework for evaluating the competitiveness of special access services, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 05-25, RM-10593, February 24, 2010.
- Declaration of Timothy J. Tardiff and Dennis L. Weisman on an analytical framework for evaluating the competitiveness of special access services, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 05-25, RM-10593, January 19, 2010
- Reply Declaration of Timothy J. Tardiff and Dennis L. Weisman on the economics of forbearance from regulating certain wholesale services, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 09-135, October 21, 2009. (Includes Dennis L. Weisman and Timothy J. Tardiff, "Principles of Competition and Regulation for the Design of Telecommunications Policy").
- Deposition Testimony, Florida Power Corporation d/b/a Progress Energy Florida, Inc., Plaintiff v. Verizon Florida LLC, Defendant, Case No: 08-013358, Circuit Court in and for Hillsborough County, Florida Civil Division, August 27, 2009.
- Expert Rebuttal Report, Florida Power Corporation d/b/a Progress Energy Florida, Inc., Plaintiff v. Verizon Florida LLC, Defendant, Case No: 08-013358, Circuit Court in and for Hillsborough County, Florida Civil Division, August 4, 2009 (with Matthew G. Medlin).
- Expert Report, Florida Power Corporation d/b/a Progress Energy Florida, Inc., Plaintiff v. Verizon Florida LLC, Defendant, Case No: 08-013358, Circuit Court in and for Hillsborough County, Florida Civil Division, July 21, 2009.
- Reply Declaration of Timothy J. Tardiff and Dennis L. Weisman on the competiveness of Commercial Mobile Radio Services, prepared for filing with the Federal Communications Commission, WT Docket No. 09-66, July 13, 2009.
- Declaration of Timothy J. Tardiff on the economics of whether traffic stimulation arrangements violate the prohibition in Section 254(k) of the 1996 Telecommunications Act against noncompetitive services subsidizing competitive services, ex parte filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 07-135, January 6, 2009.
- Direct Testimony on pole attachment rates prepared for filing on with the West Virginia Public Service Commission on behalf of Verizon, West Virginia, Inc., Case No. 07-1279-E-C (panel testimony), June 4, 2008.
- Direct and cross-examination of Timothy Tardiff on deregulation of single line retail telephone services, before the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. INU-08-1, May 21, 2008.

- Counterstatement of Timothy Tardiff and Harold Ware on deregulation of single line retail telephone services, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. INU-08-1, April 28, 2008.
- Statement of Timothy Tardiff and Harold Ware on deregulation of single line retail telephone services, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. INU-08-1, March 17, 2008.
- Reply Declaration of Timothy J. Tardiff on reasonable carrier access rates for rural telecommunications carriers, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 07-135, January 16, 2008.
- Declaration of Timothy J. Tardiff on reasonable carrier access rates for rural telecommunications carriers, prepared for filing with the Federal Communications Commission on behalf of Qwest Communications International, WC Docket No. 07-135, December 17, 2007.
- Reply Expert Report of Dr. Timothy J. Tardiff on interconnection costs and rates, prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/4, September 25, 2007.
- Expert Report of Dr. Timothy J. Tardiff on interconnection costs and rates, prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/4, August 24, 2007.
- Expert Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-28118, April 30, 2007.
- Joint Expert Supplemental Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-27331, April 6, 2007.
- Joint Expert Reply Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-27331, March 5, 2007.
- Expert Report of Daniel P. Wikel and Timothy J. Tardiff on airport terminal rental rates, prepared for filing with the Office of the Secretary, United States Department of Transportation on behalf of Tom Bradley International Terminal Airlines, Docket No. OST-2007-27331, February 23, 2007.

- Rebuttal Testimony of Timothy Tardiff and Harold Ware on predatory pricing and price discrimination allegations, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. FCU 06-48, December 1, 2006.
- Rebuttal Testimony of Timothy Tardiff and Harold Ware on predatory pricing and price squeeze allegations, prepared for filing with the Iowa Utilities Board on behalf of Iowa Telecom, Docket No. FCU 06-42, August 8, 2006.
- "Response to Digicel's Economic Analysis of Interconnection Costs and Rates," prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/1 (with Agustin J. Ros), May 12, 2006.
- "Report on Interconnection Costs in Trinidad and Tobago," prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/1 (with Agustin J. Ros), May 4, 2006.
- "Benchmarking Mobile Termination Rates: Evaluation of the .econ Report," prepared for filing with the Telecommunications Authority of Trinidad and Tobago on behalf of Telecommunications Services of Trinidad and Tobago Limited, Reference No: 4/7/06/1 (with Agustin J. Ros), February 10, 2006.
- Rebuttal Testimony of Timothy J. Tardiff on the use price floors for retail services, prepared for filing with the California Public Utilities Commission on behalf of Verizon California, Rulemaking 93-04-003, Investigation 93-04-0002, April 1, 2005.
- Rebuttal Testimony of Timothy J. Tardiff in support of the proposal of Pacific Bell Telephone Company (SBC California) to rebalance NIC Revenues, Rulemaking 03-08-018, March 21, 2005.
- Statement of William Taylor and Timothy Tardiff on alternative intercarrier compensation payment mechanisms for Voice over Internet Protocol long-distance calls, "Analysis of QSI Study," prepared for filing with the Federal Communications Commission on behalf of the United States Telecom Association, Docket No. 03-266, March 4, 2005.
- Panel Rebuttal Testimony of Timothy J. Tardiff, Francis J. Murphy, and Christian M. Dippon on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the California Public Utilities Commission on behalf of Verizon California, Rulemaking 93-04-003, Investigation 93-04-0002, November 9, 2004.
- Reply Declaration of Alfred E. Kahn and Timothy Tardiff on alternative rules for unbundling network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 04-313, October 19, 2004.
- Declaration of Alfred E. Kahn and Timothy Tardiff on alternative rules for unbundling network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 04-313, October 4, 2004.

- Declaration of William E. Taylor, Timothy J. Tardiff, and Harold Ware on the sunset of BOC separate affiliate and related requirements, ex parte communication prepared for filing with the Federal Communications Commission on behalf of BellSouth, SBC, and Verizon, WC Docket No. 02-112 and CC Docket No. 00-175, August 10, 2004.
- Reply Testimony of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the California Public Utilities Commission on behalf of Verizon California, Rulemaking 93-04-003, Investigation 93-04-0002, August 6, 2004.
- Supplemental Reply Testimony of Timothy J. Tardiff on the use of the HAI, Release 5.3
 Model for unbundled network elements costs, prepared for filing with the Washington
 Utilities and Transportation Commission on behalf of Verizon Northwest, Docket No. UT023003, June 18, 2004.
- Rebuttal Testimony of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the Washington Utilities and Transportation Commission on behalf of Verizon Northwest, Docket No. UT-023003, May 12, 2004.
- Reply Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the Washington Utilities and Transportation Commission on behalf of Verizon Northwest, Docket No. UT-023003, April 26, 2004.
- Reply Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Indiana Utility Regulatory Commission on behalf of SBC Indiana, Cause No. 42500, February 13, 2004.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Oklahoma State Corporation Commission on behalf of SBC Oklahoma, Cause No. 200300646, February 11, 2004.
- Rebuttal Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Indiana Utility Regulatory Commission on behalf of SBC Indiana, Cause No. 42500, January 30, 2004.
- Reply Declaration of Howard Shelanski and Timothy Tardiff on the review of rules for pricing unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 03-173, January 30, 2004.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Indiana Utility Regulatory Commission on behalf of SBC Indiana, Cause No. 42500, January 16, 2004.
- Rebuttal Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Missouri Public Service Commission on behalf of SBC Missouri, Case No. TO-2004-0207 Phase I, January 16, 2004.

- Reply Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the California Public Utilities Commission on behalf of SBC California, Rulemaking 95-04-043, Investigation 95-04-044, January 16, 2004.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Missouri Public Service Commission on behalf of SBC Missouri, Case No. TO-2004-0207 Phase I, December 18, 2003.
- Declaration of Alfred E. Kahn and Timothy Tardiff on the review of rules for pricing unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, WC Docket No. 03-173, December 16, 2003.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the California Public Utilities Commission on behalf of SBC California, Rulemaking 95-04-043, Investigation 95-04-044, December 12, 2003.
- Direct Testimony of Timothy J. Tardiff concerning geographic market definition, prepared for filing with the Public Utilities Commission of Ohio on behalf of SBC Ohio, Case No. 03-2040-TP-COI, November 12, 2003.
- Statement of Timothy J. Tardiff on the Commission's Telecommunications Service Obligation (TSO) Model, prepared for filing with the New Zealand Commerce Commission on behalf of Telecom Corporation of New Zealand, May 20, 2003.
- Rebuttal Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the California Public Utilities Commission on behalf of SBC California, Application Nos. 01-02-024, 01-02-035, 02-02-031, 02-02-032, and 02-03-002, March 12, 2003.
- Reply Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.3 Model for unbundled network elements costs, prepared for filing with the California Public Utilities Commission on behalf of SBC California, Application Nos. 01-02-024, 01-02-035, 02-02-031, 02-02-032, and 02-03-002, February 7, 2003.
- Affidavit of Timothy J. Tardiff on the use of the FCC's Synthesis Model to calculate unbundled network switching and transport prices, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket No. U-96-89, December 20, 2002.
- Declaration of Timothy J. Tardiff in support of the Petition of Verizon for Forbearance From The Prohibition Of Sharing Operating, Installation, and Maintenance Functions Under Section 53.203(a)(2) Of The Commission's Rules, CC Docket No. 96-149, September 24, 2002.
- Affidavit of Timothy J. Tardiff on unbundled network element pricing, prepared for filing with the Federal Communications Commission on behalf of ACS, WC Docket No. 02-201, July 24, 2002.

- Reply Declaration of Alfred E. Kahn and Timothy J. Tardiff in the triennial review of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon, CC Docket Nos. 01-338, 96-98, and 98-147, July 17, 2002.
- Statement of Alfred E. Kahn and Timothy J. Tardiff on funding the telecommunications service (universal service) obligation, prepared for filing with the New Zealand Commerce Commission on behalf of Telecom Corporation of New Zealand, June 10, 2002.
- Supplemental Surrebuttal Testimony of Timothy Tardiff and Francis Murphy on the use of the FCC's Synthesis Model for evaluating the costs of unbundled network elements, prepared for filing with the Florida Public Service Commission on behalf of Verizon-Florida, Docket No. 990649B-TP, April 22, 2002.
- Surrebuttal Testimony of Timothy Tardiff and Francis Murphy on the use of the FCC's Synthesis Model for evaluating the costs of unbundled network elements, prepared for filing with the Florida Public Service Commission on behalf of Verizon-Florida, Docket No. 990649B-TP, March 18, 2002.
- Surrebuttal Testimony of Howard Shelanski and Timothy Tardiff on economic principles for determining the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, February 8, 2002.
- Surrebuttal Testimony of Timothy J. Tardiff and Joseph A. Gansert on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, February 8, 2002.
- Rebuttal Testimony of Howard Shelanski and Timothy Tardiff on economic principles for determining the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, January 11, 2002.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Verizon-Pennsylvania, Docket No. R-00016683, January 11, 2002.
- Declaration of Alfred E. Kahn and Timothy J. Tardiff submitted to the U.S. Federal Communications Commission on behalf of Verizon regarding broadband regulation, December 18, 2001.
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon-Virginia, CC Docket Nos. 00-218, 00-249, and 00-251, November 16, 2001.

- Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.2a for deriving an unbundled switch cost reduction, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 30, 2001.
- Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.2a for deriving an unbundled loop cost reduction, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 19, 2001.
- Surrebuttal Testimony of Howard Shelanski and Timothy J. Tardiff on economic principles for determining the costs of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon-Virginia, CC Docket Nos. 00-218, 00-249, and 00-251, September 21, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Maryland Public Service Commission on behalf of Verizon-Maryland, Case No. 8879, September 5, 2001.
- Declaration of Timothy J. Tardiff on the use of the HAI, Release 5.2a and Modified Synthesis Models for unbundled loop and switch costs, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 4, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Modified Synthesis Model for the costs of unbundled network elements, prepared for filing with the Federal Communications Commission on behalf of Verizon-Virginia, CC Docket Nos. 00-218, 00-249, and 00-251, August 27, 2001.
- Affidavit of Timothy J. Tardiff on the use of proxy costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket No. U-96-89, July 27, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Hatfield Model for the costs of unbundled network elements, prepared for filing with the Massachusetts Department of Telecommunications and Energy on behalf of Verizon-Massachusetts, Docket No. D.T.E. 01-20, July 18, 2001.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Hatfield Model for the
 costs of unbundled network elements, prepared for filing with the New Jersey Board of
 Public Utilities on behalf of Verizon-New Jersey, Docket No. TO00060356, October 12, 2000.
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the State of Maine Public Utilities Commission on behalf of Bell Atlantic-Maine, Case No. 97-505, October 10, 2000.
- Public Interest Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Nevada Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Nevada Bell Long Distance for Provision of In-Region InterLATA Services in Nevada (with Alfred E. Kahn), July 24, 2000.

- Responsive Testimony on the HAI Model of unbundled network elements, prepared for filing with the New York Public Service Commission on behalf of Bell Atlantic-New York, Case 98-C-1357 (filed as part of panel testimony), June 26, 2000.
- Affidavit of Timothy J. Tardiff on avoided cost discounts for wholesale services, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, April 17, 2000.
- Third Affidavit of Timothy J. Tardiff on costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, March 24, 2000.
- Second Affidavit of Timothy J. Tardiff on costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, February 25, 2000.
- Rebuttal Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the Delaware Public Service Commission on behalf of Bell Atlantic-Delaware, Docket No. 99-251, February 24, 2000.
- Affidavit of Timothy J. Tardiff on costs models for unbundled network elements, prepared for filing with the Regulatory Commission of Alaska, on behalf of Alaska Communications Systems, Docket Nos. U-99-141, U-99-142 and U-99-143, February 11, 2000.
- Public Interest Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas (with Alfred E. Kahn), January 10, 2000.
- Rebuttal Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Bell Atlantic-Pennsylvania, Docket Nos. R-00994697 and R-00994697C0001, December 21, 1999.
- "Relaxed Regulation of High Capacity Services in Phoenix and Seattle: The Time is Now," prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petitions of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Phoenix and Seattle MSAs (with Alfred E. Kahn), July 21, 1999.
- Rebuttal Testimony of Timothy J. Tardiff on the HAI Model of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Bell Atlantic-Pennsylvania, Docket Nos. P-00991648 and P-00991649, June 15, 1999.
- "High Capacity Competition in Seattle: Reply to Comments of Intervening Parties," prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Seattle, Washington MSA (with Alfred E. Kahn), March 10, 1999.
- Rebuttal Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, February 8, 1999.

- Surrebuttal Testimony of Alfred E. Kahn and Timothy J. Tardiff filed with the Missouri Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Missouri, Docket No. TO 99-227, February 4, 1999.
- Rebuttal Testimony of Timothy J. Tardiff on the HAI Model of unbundled network elements, prepared for filing with the Rhode Island Public Utilities Commission on behalf of Bell Atlantic-Rhode Island, Docket No. 2681, January 15, 1999.
- Reply Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 11, 1999.
- "Economic Evaluation of High Capacity Competition in Seattle," prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Seattle, Washington MSA (with Alfred E. Kahn), December 22, 1998.
- Testimony of Timothy J. Tardiff on collocation costs models, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, December 18, 1998.
- "Measuring and Recovering the Costs of Long-Term Number Portability: Implications of Price Cap Regulation," Prepared for Southwestern Bell for presentation to the Federal Communications Commission, December 10, 1998.
- Direct Testimony of Alfred E. Kahn and Timothy J. Tardiff, filed with the Missouri Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Missouri, Docket No. TO 99-227, November 20, 1998.
- "High Capacity Competition in Phoenix: Reply to Comments of Intervening Parties," prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA (with Alfred E. Kahn), October 28, 1998.
- "Measuring and Recovering the Costs of Long-Term Number Portability," Prepared for Southwestern Bell for presentation to the Federal Communications Commission, October 28, 1998 (with Alfred E. Kahn).
- Declaration of Timothy J. Tardiff on the economic impacts of separate subsidiary requirements for the offer of advanced services by incumbent local exchange carriers, prepared for filing with the Federal Communications Commission on behalf of Bell Atlantic, in the matter of Deployment of Wireline Services Offering Advanced Telecommunications Capability, October 15, 1998.
- "An Analysis of the HAI Model Release 5.0a," Rebuttal Testimony filed with the Florida Public Service Commission, Docket No. 980696-TP, on behalf of GTE Florida, September 2,

- 1998 (with Gregory M. Duncan, Karyn E. Model, Christian M. Dippon, Jino W. Kim, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- "Economic Evaluation of High Capacity Competition in Phoenix," prepared for filing with the Federal Communications Commission on behalf of US WEST Communications, Petition of US WEST Communications for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA (with Alfred E. Kahn), August 14, 1998.
- Rebuttal Testimony of Timothy J. Tardiff on the HAI Model of unbundled network elements, prepared for filing with the New Hampshire Public Utilities Commission on behalf of Bell Atlantic-New Hampshire, Docket No. DE-97-1171, June 22, 1998.
- Rebuttal Affidavit before the Arkansas Public Service Commission in the matter of the Application of Southwestern Bell Telephone Company Seeking Verification that It Has Fully Complied with and Satisfied the Requirements of Section 271 (c) of the Telecommunications Act of 1996 (with Alfred E. Kahn), June 11, 1998.
- Rebuttal Testimony before the State Corporation Commission of the State of Kansas in the matter of Southwestern Bell Telephone Company – Kansas' Compliance With Section 271 of the Federal Telecommunications Act of 1996, Docket No. 97-SWBT- 411-GIT (with Alfred E. Kahn), May 27, 1998.
- Rebuttal Affidavit Before the Public Utilities Commission of the State of California in support
 of Pacific Bell's Draft Application for Authority to Provide InterLATA Services in California
 (with Alfred E. Kahn), May 20, 1998.
- "An Analysis of the Hatfield Model Release 4.0," prepared for filing with the California Public Utilities Commission on behalf of GTE California, May 1, 1998 (with Gregory M. Duncan, Karyn E. Model, Christian M. Dippon, Jino W. Kim, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Reply Testimony of Timothy J. Tardiff on unbundled network element prices and retail service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 27, 1998.
- Rebuttal Testimony of Alfred E. Kahn and Timothy J. Tardiff filed with the Oklahoma Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Oklahoma, Case No. PUD 970000560, April 21, 1998.
- Reply Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas (with Alfred E. Kahn), April 17, 1998.
- Testimony of Timothy J. Tardiff on unbundled network element prices and retail service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 8, 1998.

- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc., Pacific Bell, and Pacific Bell Communications for Provision of In-Region InterLATA Services in California (with Alfred E. Kahn), March 31, 1998.
- "Economic Principles Governing Measurement of Nonrecurring/OSS Costs: An Analysis of the AT&T/MCI Recommendations," prepared for filing with the California Public Utilities Commission on behalf of GTE California and Pacific Bell, March 4, 1998 (with Gregory M. Duncan).
- "Analysis of the Hatfield Model Release 5.0a," Rebuttal Testimony filed with the North Carolina Utilities Commission, Docket No. P-100, Sub 133d, on behalf of GTE South, March 2, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- "Analysis of the Hatfield Model Release 5.0a," Rebuttal Testimony filed with the South Carolina Public Service Commission, on behalf of GTE South, March 2, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Texas (with Alfred E. Kahn), March 2, 1998.
- "Analysis of the Hatfield Model Release 5.0a," Rebuttal Testimony filed with the Kentucky Public Service Commission, on behalf of GTE South, February 26, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Arkansas (with Alfred E. Kahn), February 24, 1998.
- Testimony before the State Corporation Commission of the State of Kansas in the matter of Southwestern Bell Telephone Company – Kansas' Compliance With Section 271 of the Federal Telecommunications Act of 1996, Docket No. 97-SWBT- 411-GIT (with Alfred E. Kahn), February 17, 1998.
- "Analysis of the Hatfield Model Release 5.0," Rebuttal Testimony filed with the Alabama Public Utilities Commission, on behalf of GTE South, February 13, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Affidavit before the Federal Communications Commission in the matter of Application of SBC Communications. Inc. Southwestern Bell Telephone Company and Southwestern Bell Communications Services, Inc. d/b/a/ Southwestern Bell Long Distance for Provision of In-Region InterLATA Services in Oklahoma (with Alfred E. Kahn), February 13, 1998.

- "Analysis of the Hatfield Model Release 5.0," Rebuttal Testimony filed with the North Carolina Utilities Commission, Docket No. P-100, Sub 133b, on behalf of GTE South, January 30, 1998 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Aniruddha Banerjee, Karyn E. Model, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on switching costs, prepared for filing with the State of Maine Public Utilities Commission on behalf of Bell Atlantic-Maine, Case No. 97-505, December 22, 1997.
- "Reply to AT&T Recommendations for Regulatory Treatment of OSS Costs," prepared for filing with the California Public Utilities Commission on behalf of GTE California and Pacific Bell, December 15, 1997 (with Gregory M. Duncan).
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Vermont Public Service Board on behalf of Bell Atlantic-Vermont, Case No. 57-13, November 21, 1997.
- Reply Affidavit of Timothy J. Tardiff on the Hatfield Model, filed with the New York Public Service Commission on behalf of Bell Atlantic-New York, Case 94-C-0095 and Case 28425, November 17, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the State of Maine Public Utilities Commission on behalf of Bell Atlantic-Maine, Case No. 97-505, October 21, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the application of the Hatfield Model to universal service funding requirements, prepared for filing with the New Jersey Board of Public Utilities on behalf of Bell Atlantic-New Jersey, Docket No. TX95120631, October 20, 1997.
- "Analysis of the Hatfield Model Release 4.0," filed with the Pennsylvania Public Utility Commission on behalf of GTE North, October 20, 1997 (with Gregory M. Duncan, Rafi A. Mohammed, Christian M. Dippon, Francis J. Murphy, Robert P. Cellupica, and Thomas F. Guarino).
- Supplemental Rebuttal Testimony of Timothy J. Tardiff on toll and carrier access demand elasticities and universal service rate rebalancing prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 10, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on toll and carrier access demand elasticities and universal service rate rebalancing, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 30, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the State Corporation Commission of Virginia on behalf of Bell Atlantic-Virginia, Case No. PUC970005, June 10, 1997.
- Reply Affidavit of Alfred E. Kahn and Timothy J. Tardiff, filed with the Federal Communications Commission, in support of the Applications of SBC Communications, Inc.,

- Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Oklahoma, May 26, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the District of Columbia Public Service Commission on behalf of Bell Atlantic-DC, Formal Case No. 962, May 2, 1997.
- Declaration of Timothy J. Tardiff on OANAD Cost Studies, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 16, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Maryland Public Service Commission on behalf of Bell Atlantic-Maryland, Case No. 8731-II, April 4, 1997.
- "Economic Evaluation of the Hatfield Model, Release 3.1," filed with the Washington Utilities and Transportation Commission on behalf of GTE, March 28, 1997 (with Gregory M. Duncan and Rafi Mohammed).
- "Economic Evaluation of the Hatfield Model, Version 2.2, Release 2," prepared for filing with the California Public Utilities Commission on behalf of GTE California and Pacific Bell, March 18, 1997 (with Gregory M. Duncan).
- Statement of Alfred E. Kahn and Timothy J. Tardiff, "Funding and Distributing the Universal Service Subsidy," Prepared for US West for presentation to the Federal Communications Commission, March 13, 1997.
- Testimony of Timothy J. Tardiff on toll and carrier access demand elasticities, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 6, 1997.
- Surrebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Pennsylvania Public Utility Commission on behalf of Bell Atlantic-Pennsylvania, Dockets A-310203F0002, A-310213F0002, A-310236F0002, A-310258F0002, February 21, 1997.
- Affidavit of Alfred E. Kahn and Timothy J. Tardiff, filed with the Oklahoma Public Service Commission, in support of the Applications of SBC Communications, Inc., Southwestern Bell Telephone Company, and Southwestern Bell Communications Services, Inc., for Provision of In-Region InterLATA Services in Oklahoma, February 21, 1997.
- "Reply to Kravtin/Selwyn Analysis of the Gap Between Embedded and Forward-Looking Costs," affidavit filed with the Federal Communications Commission, In the Matter of Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, Transport Rate Structure and Pricing, on behalf of GTE, February 14, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Arkansas Public Service Commission on behalf of Southwestern Bell Telephone Company, Docket 96-395-U, January 9, 1997.

- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Kansas Corporation Commission on behalf of Southwestern Bell Telephone Company, Docket 97-AT&T-290-Arb, January 6, 1997.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Massachusetts Department of Public Utilities on behalf of New England Telephone and Telegraph Company, Docket 96-80/81, October 30, 1996.
- Statement of Alfred E. Kahn and Timothy J. Tardiff, "Joint Marketing, Personnel Separation and Efficient Competition Under the Telecommunications Act of 1996," Prepared for US West for presentation to the Federal Communications Commission, October 11, 1996.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Oklahoma Public Service Commission on behalf of Southwestern Bell Telephone Company, September 30, 1996.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Missouri Public Service Commission on behalf of Southwestern Bell Telephone Company, Case No. TO-97-040 & TO 97-40-67, September 30, 1996.
- "Economic Evaluation of Version 2.2 of the Hatfield Model," prepared for filing in interconnection arbitrations in Pennsylvania, California, Florida, Indiana, North Carolina, Oklahoma, Iowa, Texas, Virginia, Minnesota, Hawaii, Nebraska, Kentucky, Washington, and Missouri on behalf of GTE, September 1996 (with Gregory M. Duncan).
- Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the Texas Public Utility Commission on behalf of Southwestern Bell Telephone Company, Docket Nos. 16189, 16196, 16226, 16285, 16290, September 6, 1996.
- "Economic Analysis of MFS's Numerical Illustration," prepared for filing with the Federal Communications Commission, In the Matter of Implementation of the Non-Accounting Safeguards of Sections 271 and 272 of the Communications Act of 1934, as amended and Regulatory Treatment of LEC Provision of Interexchange Services Originating in the LEC's Local Exchange Area, on behalf of US West, August 30, 1996.
- Affidavit of Timothy J. Tardiff on proxy rates for unbundled local switching, prepared for filing with the Federal Communications Commission on behalf of GTE Corporation, petition for a stay of the First Report and Order in the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, August 28, 1996.
- Rebuttal Testimony of Timothy J. Tardiff on the Hatfield Model of unbundled network elements, prepared for filing with the New York Public Service Commission on behalf of New York Telephone, July 15, 1996.
- Reply Testimony of Timothy J. Tardiff on local exchange service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, July 10, 1996.

- "Economic Evaluation of Version 2.2 of the Hatfield Model," attached to Reply Testimony of Timothy J. Tardiff, prepared for filing with the California Public Utilities Commission on behalf of GTE California, July 10, 1996. Also presented to the Federal Communications Commission as attachment to letter from Whitney Hatch of GTE to William F. Caton, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, July 11, 1996.
- Testimony of Timothy J. Tardiff on local exchange service price floors, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, June 14, 1996.
- Declaration of Alfred E. Kahn and Timothy J. Tardiff, prepared for filing with the Federal Communications Commission, In the Matter of Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, on behalf of Bell Atlantic, May 30, 1996.
- Declaration of Timothy J. Tardiff on Round I and Round II OANAD Cost Studies, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, May 24, 1996.
- "Economic Evaluation of Pacific Bell's Round I and Round II Cost Studies: Reply Comments," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, April 17, 1996.
- "Incremental Cost Principles for Local and Wireless Network Interconnection," prepared for filing with the Federal Communications Commission on behalf of Pacific Telesis, March 4, 1996 (with Richard D. Emmerson).
- "Economic Evaluation of Selected Issues from the Fourth Further Notice of Proposed Rulemaking in the LEC Price Cap Performance Review: Reply Comments," Prepared for filing with the Federal Communications Commission on behalf of the United States Telephone Association, March 1, 1996 (with William E. Taylor and Charles J, Zarkadas).
- Declaration of Timothy J. Tardiff on the toll and carrier access demand stimulation caused by the January 1, 1995 price reductions (update), prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 19, 1996.
- "Universal Service Funding and Cost Modeling," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 19, 1996.
- "Changes in Interstate Price Regulation: Reply Comments," prepared for filing with the Federal Communications Commission on behalf of Pacific Bell and Nevada Bell, January 10, 1996.
- "Economic Evaluation of Selected Issues from the Fourth Further Notice of Proposed Rulemaking in the LEC Price Cap Performance Review," Prepared for filing with the Federal Communications Commission on behalf of the United States Telephone Association, December 18, 1995 (with William E. Taylor and Charles J, Zarkadas).
- "Changes in Interstate Price Regulation: An Economic Evaluation of the Pacific Bell and Nevada Bell Proposal," prepared for filing with the Federal Communications Commission on behalf of Pacific Bell and Nevada Bell, December 11, 1995 (with Alfred E. Kahn).

- "Evaluation of the Benchmark Cost Model," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, December 1, 1995.
- Affidavit of William E. Taylor and Timothy J. Tardiff on interconnection regulation, prepared for filing with the Mexican Secretariat of Communications and Transport on behalf of Southwestern Bell International Holdings Corporation, October 18, 1995.
- Participant, California Public Utilities Commission, Full Panel Hearing on Universal Telephone Service, September 29, 1995.
- "Incentive Regulation and Competition: Reply Comments," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 18, 1995 (with Richard L. Schmalensee and William E. Taylor).
- "Incentive Regulation and Competition: Issues for the 1995 Incentive Regulation Review," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 8, 1995 (with Richard L. Schmalensee and William E. Taylor).
- "Preserving Universality of Subscription to Telephone Service in an Increasingly Competitive Industry," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 1, 1995 (with Alfred E. Kahn).
- Declaration of Timothy J. Tardiff and Lester D. Taylor on the toll and carrier access demand stimulation caused by the January 1, 1995 price reductions, prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, September 1, 1995.
- "Economic Evaluation of Proposed Long-Run Incremental Cost (LRIC) Methodology," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, July 13, 1995 (with Richard D. Emmerson).
- "California Public Utilities Commission Proposed Rules for Local Competition: An Economic Evaluation," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, May 24, 1995.
- "Benefits and Costs of Vertical Integration of Basic and Enhanced Telecommunications Services," prepared for filing with the Federal Communications Commission, Computer III Further Remand Proceedings, CC Docket No. 95-20, on behalf of Bell Atlantic, Bell South, NYNEX, Pacific Bell, Southwestern Bell, and U S West, April 6, 1995 (with Jerry A. Hausman).
- "Evaluation of the MCI's Universal Service Funding Proposal," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 10, 1995.
- "Franchise Services and Universal Service," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 10, 1995 (with Richard D. Emmerson).
- Illinois Commerce Commission on behalf of GTE North: surrebuttal testimony on the benefits of intraMSA presubscription, September 30, 1994.
- Illinois Commerce Commission on behalf of GTE North: rebuttal testimony on the benefits of intraMSA presubscription, September 16, 1994.

- "Economic Evaluation of OIR/OII on Open Access and Network Architecture Development: Reply Comments," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, March 31, 1994 (with Richard D. Emmerson).
- "Declaration of Timothy J. Tardiff on Pacific Bell's Productivity Under Price Caps," prepared for filing with the Federal Communications Commission, on behalf of Pacific Bell, February 28, 1994.
- "Regulation of Mobile and Wireless Telecommunications: Economic Issues," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, February 25, 1994
- "Economic Evaluation of OIR/OII on Open Access and Network Architecture Development," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, February 8, 1994 (with Richard D. Emmerson).
- "Access to Intelligent Networks: Economic Issues," prepared for filing with the Federal Communications Commission, on behalf of Pacific Bell, December 1, 1993.
- "The Effect of SFAS 106 on Economy-Wide Wage Rates," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, October 1, 1993
- "Economic Evaluation of the NRF Review: Reply Comments," prepared for filing with the California Public Utility Commission on behalf of Pacific Bell, May 7, 1993. William E. Taylor and Timothy J. Tardiff, Study Directors.
- "Performance Under Alternative Forms of Regulation in the U.S. Telecommunications Industry," prepared for filing with the Canadian Radio-television and Telecommunications Commission on behalf of AGT Limited, April 13, 1993. Timothy J. Tardiff and William E. Taylor, Study Directors.
- "Pacific Bell's Performance Under the New Regulatory Framework: An Economic Evaluation
 of the First Three Years," prepared for filing with the California Public Utility Commission on
 behalf of Pacific Bell, April 8, 1993. William E. Taylor and Timothy J. Tardiff, Study Directors.
- "Pricing Interconnection and the Local Exchange Carrier's Competitive Interstate Services," prepared for filing with the Federal Communications Commission, on behalf of Pacific Bell, February 19, 1993.
- "The Treatment of FAS 106 Accounting Changes Under Price Cap Regulation: Reply Comments," prepared for filing with the Federal Communications Commission on behalf of Pacific Bell, July 1992. William E. Taylor and Timothy J. Tardiff, Study Directors.
- "Costs and Benefits of IntraLATA Presubscription," prepared for filing with the State of New York Public Service Commission on behalf of New York Telephone, May 1, 1992. Timothy J. Tardiff and William E. Taylor, Study Directors.
- "The New Regulatory Framework 1990-1992: An Economic Review," prepared for filing with the California Public Utility Commission on behalf of Pacific Bell, May 1, 1992. William E. Taylor and Timothy J. Tardiff, Study Directors.

- "The Treatment of FAS 106 Accounting Changes Under Price Cap Regulation," prepared for filing with the Federal Communications Commission on behalf of Pacific Bell, April 15, 1992.
 William E. Taylor and Timothy J. Tardiff, Study Directors.
- "The Treatment of FAS 106 Accounting Changes Under Pacific Bell's Price Regulation Plan: Economic Analysis of the DRA Supplemental Testimony," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, January 21, 1992. William E. Taylor and Timothy J. Tardiff, Study Directors.
- "The Treatment of FAS 106 Accounting Changes Under Pacific Bell's Price Regulation Plan," prepared for filing with the California Public Utilities Commission on behalf of Pacific Bell, November 15, 1991. William E. Taylor and Timothy J. Tardiff, Study Directors.
- California Public Utilities Commission on behalf of Pacific Bell: economic principles for pricing flexibility for Centrex service, Filed November 1990.
- Expert Witness on State Transportation Energy Forecasting, California Energy Commission,
 Sacramento, September 1980.

Selected client reports

- Rates of Return of Broker-Sold and Direct-Sold Mutual Funds, With Karthik Padmanabhan and Constantijn Panis, Prepared for the United States Department of Labor, March 15, 2016.
- Review of Selected Studies and Comments in Response to the Department of Labor's Conflict of Interest 2015 Proposed Rule and Exemptions, With Karthik Padmanabhan and Constantijn Panis, Prepared for the United States Department of Labor, March 4, 2016.
- Summary of Proposed Revenue Sharing Arrangements: 2013 Update, (Confidential), Prepared for the Los Angeles County Metropolitan Transportation Authority, February 8, 2013.
- Antitrust and Community Impact Report on the Conversion of Blue Cross and Blue Shield of Montana and Alliance with Health Care Service Corporation, With Daniel S. Levy, Audrius Girnius, and Karthik Padmanabhan, Prepared for the Montana Office of the Commissioner of Securities and Insurance, January 29, 2013.
- Summary of Proposed Revenue Sharing Arrangements, (Confidential), Prepared for the Los Angeles County Metropolitan Transportation Authority, April 25, 2012.
- Principles of Competition and Regulation for the Design of Telecommunications Policy, With Dennis L. Weisman, Prepared for Qwest Corporation, October 21, 2009.
- Report on the TSTT Cost Model, With Agustin J. Ros, Nigel Attenborough, and Trung Lu (Confidential), Prepared for Telecommunications Services of Trinidad and Tobago Limited, September 14, 2005.
- Interconnection Costing Methodology: Theory and Practice, With William E. Taylor, Nigel Attenborough, Agustin J. Ros, and Yogesh Sharma, Prepared for the Chinese Academy of Social Sciences, April 15, 2003.

- Imputation Tests for Bundled Services, With Greg Houston, Carol Osborne, and Jennifer Fish, Prepared for the Australian Competition and Consumer Commission, January 2003.
- Anticompetitive Bundling Strategies, With Greg Houston, Carol Osborne, and Jennifer Fish,
 Prepared for the Australian Competition and Consumer Commission, January 2003.
- Estimación de la TFP de Telefónica del Perú y del Cambio en Precios del Regimen de Precios Tope, With Agustin Ros, Jose Maria Rodriguez and Juan Hernandez, Final Report prepared for the Supervising Agency for Private Investment in Telecommunications in Peru (OSIPTEL) on behalf of Telefonica de Peru, June 22, 2001.
- Enhancing Competition for Broadband Services: The Case for Removing the Prohibition against High-Speed InterLata Transmission by Regional Bell Operating Companies, With Alfred E. Kahn, Prepared for the United States Telecom Commission, May 22, 2000 (released April 2001).
- An Economic Evaluation of Network Cost Models, With Jaime d'Almeida, William Taylor, and Charles Zarkadas, Prepared for Telecordia Technologies, August 2000.
- An Analysis of Resale in Long Distance Telecommunications Markets, With William E. Taylor and J. Douglas Zona (Confidential) Prepared for plaintiffs in Darren B. Swain, Inc. d/b/a U.S. Communications v. AT&T Corp., November 15, 1995.
- An Analysis of Long Distance Telecommunications Markets, With William E. Taylor and J. Douglas Zona (Confidential) Prepared for plaintiffs in US WATS, Inc. and USW Corp. v. AT&T Corp., August 22, 1995.
- Economic Significance of Interconnection, Prepared for Japan Telecom, June 1995.
- The Effect of Competitive Entry into Local Exchange and State Toll Markets on the Revenues of Southern New England Telephone, with J.D. Zona, (Confidential), Prepared for Southern New England Telephone, February 1995.
- Long-Distance Call Alert (LDCA) Study: Customer Choice Model Findings, with C.J. Zarkadas, (Confidential), Prepared for Southwestern Bell, August 9, 1994.
- Pricing Principles for LEC Services, (with R.D. Emmerson), Prepared for BellSouth Communications, July 8, 1994.
- Quantifying the Handicaps of Unequal Access, (Confidential) Prepared for Japan Telecom, January 1994.
- Overcoming Unequal Access: The International Experience, with S. Krom, (Confidential)
 Prepared for Japan Telecom, January 1994.
- Market Potential For Cellular Radio And Other Personal Communications Products.
 (Confidential) Prepared for Pac Tel Corporation, July 1990.
- Customer Demand for Local Telephone Services: Models and Applications. Prepared for South Central Bell Telephone Company, August 1987.

- Evaluation Plans for Conservation and Load Management Programs. Prepared for New England Electric System, July 1987.
- Telecommunications Competition for Large Business Customers in New York (Confidential).
 Prepared for NYNEX Corporation, June 1987.
- Demand for Intrastate Long Distance Optional Calling Plans by Business and Residential Customers, with J.A. Hausman and A. Jaffe, (Confidential), Prepared for Southern New England Telephone, December 1985.
- "Estimation of Residential Conservation Service Program Electricity Savings," Prepared for Southern California Edison Company, July 1984.
- The Demand for Local Telephone Service Upon the Introduction of Optional Local Measured Service. In part. Final report, prepared for Southern New England Telephone, July 1982.
- Transit Strategies to Improve Air Quality in the Philadelphia Region. In part. Final report prepared for the Delaware Valley Regional Planning Commission, April 1982.
- Estimation of Energy Impacts of State Transportation Improvement Program Projects. In part. Final report prepared for the California Energy Commission, January 1982.
- Consumer Representation for Transportation Energy Conservation. In part. Final report prepared for the U.S. Department of Energy, July 1981.
- Indicators of Supply and Demand for Transportation Fuels. In part. Prepared for the California Energy Commission, December 1980.
- State of the Art in Research on Consumer Impacts of Fuel Economy Policies: Recent Findings and Recommendations for Further Research. In part. Prepared for the National Highway Traffic Safety Administration, January 1980.

Selected publications and presentations

- Glass, V. and Tardiff, T., "The Federal Communications Commission's Rural Infrastructure Auction: What is Hidden in the Weeds?" Telecommunications Policy, Vol. 43, Issue 8, 2019. Also presented at Rutgers University, Center for Research in Regulated Industries, Advanced Workshop on Regulation and Competition, 38th Annual Eastern Conference, Shawnee on Delaware, Pennsylvania, May 31, 2019.
- Glass, V. and Tardiff, T., "A New Direction of the Net Neutrality Debate," Telecommunications Policy, Vol. 43, Issue 3, 2019, pp. 199-212. Also presented at Rutgers University, Center for Research in Regulated Industries, Advanced Workshop on Regulation and Competition, 37th Annual Eastern Conference, Ellicott City, Maryland, June 7, 2018.
- Glass, V., Ackerman, E., Flank, S., and Tardiff, T., "Sectionalized Microgrids: The Key to Regulatory Assistance for Unbundling Reliability?" Electricity Journal, Volume 31, Issue 9, pp. 8-13.
- Glass, V., Ackerman, E., Flank, S., and Tardiff, T., "Unbundling Reliability: Lessons from the Telecom Industry, Electricity Journal, Vol. 31, Issue 7, 2018, pp. 1-7.

- Tardiff, T.J. and Weisman, D.L., "Mandatory Upstream Inputs and Upward Pricing Pressure: Implications for Competition Policy," Research in Law and Economics, Vol. 28, 2018, pp. 401-421. Also presented at Rutgers University, Center for Research in Regulated Industries, Advanced Workshop on Regulation and Competition, 36th Annual Eastern Conference, Annapolis, Maryland, June 2, 2017.
- Glass, V. and Tardiff, T., "What Types of Regulatory and Pricing Strategies Work When Customers are Likely to Become Competitors?" Rutgers Business Review, Vol. 2, No. 3, 2017, pp. 295-314. Also presented at Rutgers University, Center for Research in Regulated Industries, Advanced Workshop on Regulation and Competition, 36th Annual Eastern Conference, Annapolis, Maryland, June 1, 2017.
- Glass, V. and Tardiff, T., "Reregulation of Business Data Services," Rutgers Business Review, Vol. 2, No. 1, 2017, pp. 70-97. Also presented at Rutgers University, Center for Research in Regulated Industries, Advanced Workshop on Regulation and Competition in Network Industries, Newark, New Jersey, November 18, 2016.
- Tardiff, T.J., "Economic Evaluation of the Factual Basis for the FCC's Open Internet Order,"
 Criterion Journal on Innovation, Vol. 1, 2016, pp. 479-495.
- Tardiff, T.J., "Recent Developments in Pole Attachment Regulation," Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 35th Annual Eastern Conference, Shawnee on Delaware, Pennsylvania, May 12, 2016.
- Tardiff, T.J., "Net Neutrality: Economic Evaluation of Market Developments," Journal of Competition Law & Economics, Vol. 11, No. 3, 2015, pp. 701-725. Also presented at Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 33rd Annual Eastern Conference, Shawnee on Delaware, Pennsylvania, May 13, 2015.
- Tardiff, T.J., "Prices Based on Current Costs or Historical Costs How Different Are They?"
 Journal of Regulatory Economics, Vol. 47, No. 2, 2015, pp. 201-217. Also presented at
 Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in
 Regulation and Competition, 33rd Annual Eastern Conference, Shawnee on Delaware,
 Pennsylvania, May 15, 2014.
- Tardiff, T.J., "Reregulation or Better Deregulation?: Economic Evaluation of Recent FCC Competition Actions," Journal of Competition Law & Economics, Vol. 11, No. 1, 2015, pp. 145-163. Also presented at Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 32nd Annual Eastern Conference, Shawnee on Delaware, Pennsylvania, May 16, 2013.
- Tardiff, T.J. Panelist, "The Economics and Investment Perspective," Federal Communications
 Bar Association New England Chapter/Boston University School of Communications,
 Deregulation: How's It Going, Boston University, October 2, 2014.

- Tardiff, T.J. and Levy, D.S., "Prologue II: Lester Taylor's Insights," in J. Alleman, A. Ni-Shuilleabhain, and P. Rappaport, eds., Demand for Communications Services Insights and Perspectives, New York: Springer, 2014.
- Levy, D.S. and Tardiff, T.J., "Pricing and Maximizing Profits within Corporations," in J.
 Alleman, A. Ni-Shuilleabhain, and P. Rappaport, eds., Demand for Communications Services

 Insights and Perspectives, New York: Springer, 2014.
- Tardiff, T.J., "Protected Profits Benchmark: Input Price, Retail Price, or Both?" Antitrust Law Journal, Vol. 78, Issue 3, 2013, pp. 719-727.
- Levy, D.S. and Tardiff, T.J., "Pricing and Maximizing Profits within Corporations: Applications
 of Lester Taylor's Insights," Presented at Telecommunications Demand and Investment: The
 Road Ahead, Conference in Honor of Emeritus Professor Lester D. Taylor, Jackson Hole,
 Wyoming, October 10, 2011.
- Huther, C.S., Troy, M.H. and Tardiff, T.J., "The FCC Pole Attachment Order and the Future of Joint Use," Communications Environmental & Land Use Law, Vol.2011, No. 6, June 1, 2011, pp. 5-10.
- Tardiff, T.J., Alfred E. Kahn (1917-2010), Journal of Regulatory Economics, Vol. 39, No.2, 2011, pp. 221-222.
- Tardiff, T.J., "Evaluating Competition Policies: Efficiency Metrics for Network Industries,"
 Journal of Competition Law & Economics, Vol. 6, No. 4, 2010, pp. 957-972. Also presented at
 Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in
 Regulation and Competition, 28th Annual Eastern Conference, Skytop, Pennsylvania, May
 14, 2009.
- Huther, C.S., Troy, M.H. and Tardiff, T.J., "The National Broadband Plan and the FCC Pole Attachment Proceeding," Communications Environmental & Land Use Law Report, Vol. 13, No. 10, October 2010, pp. 3-7.
- Tardiff, T.J., "Performance-Based Regulation," Presented to Commissioners and Staff of the Alberta Utilities Commission, Edmonton, Alberta, Canada, September 29-30, 2009.
- Tardiff, T.J. and Weisman, D.L., "The Dominant Firm Revisited," Journal of Competition Law & Economics, Vol. 5, No. 3, 2009, pp. 517-536. Also presented at the Seventeenth Biennial Conference of the International Telecommunications Society, Montreal, Canada, June 25, 2008.
- Huther, C.S., Troy, M.H. and Tardiff, T.J., "A Legal and Economic Justification for a Uniform Pole Attachment Rate," (Three Part Series), Communications Environmental & Land Use Law Report, Vol. 11, No. 11 through Vol. 12, No. 1, December 2008 through January 2009.
- Hausman, J.A., Sidak, J.G., and Tardiff, T.J., "Are Regulators Forward-Looking? The Market Price of Copper Versus the Regulated Price of Mandatory Access to Unbundled Loops in Telecommunications Networks," Federal Communications Law Journal, Vol. 61, 2008, December.

- Weisman, D.L. and Tardiff, T.J., "Editors' Foreword," Special Issue in Honour of Alfred Kahn's 90th Birthday, Review of Network Economics, Vol. 7, 2008, December.
- Tardiff, T.J. Panelist, "Telecommunications: Assessing the Lessons from the 1996 Telecom Act," Silicon Flatirons Conference, Deregulation Revisited: A Tribute to Fred Kahn, University of Colorado, Boulder, September 5, 2008.
- Tardiff, T.J. and Ros, A.J., "Establishing Mobile Termination Rates: Lessons from the Caribbean," Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 27th Annual Eastern Conference, Skytop, Pennsylvania, May 15, 2008.
- Tardiff, T.J., "Changes in Industry Structure and Technological Convergence: Implications for Competition Policy and Telecommunications Regulation," International Economics and Economic Policy, Vol. 4, 2007, pp. 103-133. Earlier versions were presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 25th Annual Eastern Conference, Skytop, Pennsylvania, May 19, 2006 and the 34th Telecommunications Policy Research Conference, Arlington, Virginia, October 1, 2006.
- Ware, H. and Tardiff, T.J., "Facilities-Based Entry and Predatory Pricing Allegations: Lessons from Iowa," Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 26th Annual Eastern Conference, Skytop, Pennsylvania, May 17, 2007.
- Taylor, W. and Tardiff, T., "Anticompetitive Price Squeezes in the Telecommunications Industry: A Common Complaint about Common Facilities," in L. Wu, ed., Economics of Antitrust: Complex Issues in a Dynamic Economy, 2007.
- Tardiff, T.J., Instructor, First Advanced Course in Regulatory Economics and Process, Public Utility Research Center, University of Florida, Gainesville, Florida, April 3, 2007.
- Tardiff, T. J., "The Economics of Access and Interconnection Charges in Telecommunications," in M. Crew and D. Parker, eds., The International Handbook of Economic Regulation, Cheltenham: Edward Elgar, 2006.
- Calvin Monson and Timothy Tardiff, "A Course on Telecommunications Interconnection,"
 Presented to Global Information and Communications Technologies, The World Bank Group, Washington, D.C., September 22, 2005.
- Tardiff, T.J. and Taylor,, W.E. "Prevention and Detection of Price Squeezes Nine Years after the Telecommunications Act," Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 24th Annual Eastern Conference, Skytop, Pennsylvania, May 19, 2005.
- Tardiff, T.J. and Taylor, W.E., "Aligning Price Regulation with Telecommunications Competition," Review of Network Economics, Vol. 2, 2003, December. An earlier version was presented at the Rutgers University, Center for Research in Regulated Industries,

- Advanced Workshop in Regulation and Competition, 22nd Annual Eastern Conference, Skytop, Pennsylvania, May 22, 2003.
- Tardiff, T. J., "Product Bundling and Wholesale Pricing," in G. Madden, ed., Emerging Telecommunications Networks, The International Handbook of Telecommunications Economics, Volume II, Cheltenham: Edward Elgar, 2003.
- Crandall, R.W., Hahn, R.W., and Tardiff, T.J., "The Benefits of Broadband and the Effect of Regulation," in R.W. Crandall and J. Alleman, eds., Broadband: Should We Regulate High Speed Internet Access?, Washington: AEI-Brookings Center Joint for Regulatory Studies, 2002.
- Tardiff, T. J., "Universal Service," in M.A. Crew and J.C. Schuh, eds., Markets, Pricing, and Deregulation of Utilities, Boston: Kluwer, 2002.
- Tardiff, T.J., "Pricing Unbundled Network Elements and the FCC's TELRIC Rule: Economic and Modeling Issues," Review of Network Economics, Vol. 1, Issue 2, 2002, pp. 132-146. An earlier version was presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 21st Annual Eastern Conference, Newport, Rhode Island, May 23, 2002.
- Tardiff, T.J., "Valuing the Use of Incumbent Telecommunications Networks," Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 20th Annual Eastern Conference, Tamiment, Pennsylvania, May 24, 2001.
- Tardiff, T.J., "State of Competition for Local Exchange Services: Implications for Telecommunications Policy," Presented at the Law Seminars International 2nd Annual Conference on Telecommunications in the Southwest, Phoenix, Arizona, February 15, 2001.
- Tardiff, T.J., "New Technologies and Convergence of Markets: Implications for Telecommunications Regulation," Journal of Network Industries, Vol. 1, No. 4, 2000, pp. 447-468. Also presented at the Thirteenth Biennial Conference of the International Telecommunications Society, Buenos Aires, Argentina, July 3, 2000.
- Tardiff, T. J., "Cost Standards for Efficient Competition," in M.A. Crew, ed., Expanding Competition in Regulated Industries, Boston: Kluwer, 2000. Also presented at the Competitive Entry in Regulated Industries Seminar, Rutgers University Center for Research in Regulated Industries, Newark, New Jersey, October 22, 1999.
- Tardiff, T.J., "Demand for High-Speed Services: Implications for RBOC Entry Into InterLATA Services," Presented at the 2000 International Communications Forecasting Conference, Seattle, Washington, September 28, 2000.
- Tardiff, T.J., "Universal Access to Telephone Service and Implications of the USO," Presented
 at the Rutgers University, Center for Research in Regulated Industries, 8th Conference on
 Postal and Delivery Economics, Vancouver, Canada, June 10, 2000.
- Tardiff, T.J., "Universal Access to Telephone Service: Theory and Practice," Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in

Regulation and Competition, 19th Annual Eastern Conference, Lake George, New York, May 25, 2000.

- Tardiff, T.J., "The Forecasting Implications of Telecommunications Cost Models," and "Forward-Looking Telecommunications Cost Models," in J. Alleman and E. Noam, eds., The New Investment Theory of Real Options and its Implications for Telecommunications Economics, Boston: Kluwer, 1999. The first article was also presented at the 1999 International Communications Forecasting Conference, Denver, Colorado, June 17, 1999.
- Kahn, A.E., Tardiff, T.J., and Weisman, D.L., "The Telecommunications Act at Three Years: An Economic Evaluation of Its Implementation by the Federal Communications Commission," Information Economics and Policy, Vol. 11, No. 4, December 1999, pp. 319-365.
- Tardiff, T.J., "Effects of Large Price Reduction on Toll and Carrier Access Demand in California," in L.D. Taylor and D.G. Loomis, eds., The Future of the Telecommunications Industry: Forecasting and Demand Analysis, Boston: Kluwer, 1999. Also presented at the 1996 International Communications Forecasting Conference, Dallas, Texas, April 18, 1996.
- Grieve. W.A. and Tardiff, T.J., "Universal Service in the United States and Canada: Funding High-Cost Areas," Presented at the Telecommunications Policy Research Conference, Alexandria, Virginia, September 27, 1999.
- Tardiff, T.J., "The Growth of Local Exchange Competition: Implications for Telecommunications Regulation," Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation and Competition, 12th Annual Western Conference, San Diego, California, July 8, 1999.
- Tardiff, T.J., "Trends in Local Exchange Competition," Presented at the 25th Annual Rate Symposium, St. Louis, Missouri, April 27, 1999.
- Tardiff, T.J., "Regional Bell Operating Company InterLATA Entry and the Public Interest,"
 Presented at the 25th Annual Rate Symposium, St. Louis, Missouri, April 26, 1999.
- Tardiff, T.J., "Cost Standards for Pricing Unbundled Elements and Retail Services," Presented
 at the Institute for International Research Fourth Annual Conference for Competitive Pricing
 of Telecommunications Services, Washington, DC, March 25, 1999.
- Tardiff, T.J., Speaker: Cost of Hypothetical Providers vs. Real Providers Panel, INDETEC International, Cost and Public Policy: 1999, February 10, 1999.
- Tardiff, T.J. Discussant: "TELRIC: An Overview," Presented at The Columbia University New Investment Theory of Real Options and its Implications for the Cost Models in Telecommunications Conference, New York, New York, October 2, 1998.
- Tardiff, T.J., Workshop Leader, Wholesale and Retail Pricing Workshop, Presented at the Institute for International Research Third Annual Conference for Competitive Pricing of Telecommunications Services, Chicago, IL, July 22, 1998.
- Tardiff, T.J., "Pricing Essential Inputs and Efficient Competition," Presented at the Rutgers University, Center for Research in Regulated Industries, Advanced Workshop in Regulation

- and Public Utility Economics, 11th Annual Western Conference, Monterey, California, July 9, 1998.
- Tardiff, T.J., "Incremental Cost Basis for Interconnection Pricing," Presented at the Institute for International Research Interconnection '98 Conference, Washington, D.C., April 29, 1998.
- Tardiff, T.J., "Regulatory Implications of Local Exchange Cost Models," Presented at the 24th Annual Rate Symposium, Kansas City, Missouri, April 28, 1998.
- Tardiff, T.J., "What's Happening in Local Competition," Presented at the 24th Annual Rate Symposium, Kansas City, Missouri, April 27, 1998.
- Tardiff, T.J. "Pricing and New Product Options with Telecommunications Competition," in D.R. Dolk, ed., Proceedings of the Thirty-First Annual Hawaii International Conference on Systems Sciences, Vol. V, Modeling Technologies and Intelligent Systems Track, Los Alamitos: IEEE Computer Society, January 6-9, 1998, pp. 416-425.
- Froeb, L.M., Tardiff, T.J., and Werden, G.J., "The Demsetz Postulate and the Effects of Mergers in Differentiated Products Industries," in F.S. McChesney, ed., Economic Inputs, Legal Outputs: The Role of Economists in Modern Antitrust, New York: Wiley, 1998. Also presented at the Annual Meeting of the American Economic Association, Washington, D.C. January 8, 1995.
- Tardiff, T.J., "Pricing and Product Offerings for the New Competitive Telecommunications Environment," Presented at the Canadian Institute Competitive Strategies Telecommunications Conference, Toronto, Canada, September 29, 1997.
- Tardiff, T.J., "Cost Basis for Pricing: Embedded or Incremental," Presented at the Institute for International Research Cost Allocation Forum, Atlanta, Georgia, September 17, 1997.
- Tardiff, T.J., "Costing and Pricing for Local Exchange Competition: Experience Under the U.S. Telecommunications Act," in P. Enslow, P. Desrochers, and I. Bonifacio, eds., Proceedings of the Global Networking '97 Conference, Amsterdam: IOS Press, June 15-18, 1997, pp. 286-292.
- Tardiff, T.J., "Unbundling and Resale: Lessons from South of the Border," presented at the Bell Canada Total Competition Briefing Session, Toronto, Canada, April 16, 1997.
- Tardiff, T.J., "Unbundling and Resale Under the Telecommunications Act and the FCC's Interconnection Order: Implications for Industry Structure and Competitive Strategies," presented at the International Communications Group Telecommunications Business Environment Conference, Denver, Colorado, January 7, 1997.
- Hausman, J. and T. Tardiff, "Valuation of New Services in Telecommunications," in A. Dumont and J. Dryden, The Economics of the Information Society, Luxembourg: Office for Official Publications of the European Communities, 1997, pp. 76-80. Also presented to the OECD Workshop on the Economics of the Information Society, Toronto, Canada, June 28, 1995.

- Tardiff, T.J., "Universal Service with Full Competition," in S.L. Hansen, ed., Universal Service with Network Competition, University of Auckland, 1996, pp. 51-64. Also presented at the Eleventh Biennial Conference of the International Telecommunications Society, Seville, Spain, June 18, 1996 and on my behalf by J. Oliver at the Telecommunications Universal Service Symposium, Wellington, New Zealand, July 2, 1996.
- Tardiff, T.J., "Efficient Pricing of Competitive Local Exchange Services: Understanding the Costing Principles," presented at the Institute for International Research Conference on Competitive Costing Strategies for Local Exchange Services, New Orleans, Louisiana, October 24, 1996.
- Tardiff, T. J. and Taylor, W.E., "Revising Price Caps: The Next Generation of Incentive Regulation Plans," in M.A. Crew, ed., Pricing and Regulatory Innovations Under Increasing Competition, Norwell, MA: Kluwer, 1996, pp. 21 38. Also presented at the Rutgers University Center for Research in Regulated Industries Research Seminar, May 3, 1996.
- Tardiff, T.J., "New Product and Pricing Options for the Competitive Telecommunications Environment: Lessons from Consumer Choice Studies," presented at the International Communications Group Business Opportunities in Telecommunications Conference, Denver, Colorado, July 31, 1996.
- Tardiff, T.J., "Efficient Local Competition and Universal Service," presented at the International Communications Group Business Opportunities in Telecommunications Conference, Denver, Colorado, July 31, 1996.
- Tardiff, T.J., "Pricing and Product Offerings in a Competitive Environment," presented at the Canadian Institute Conference on Telecommunications Pricing, Toronto, Ontario, Canada, March 7, 1996.
- Werden, G.J., Froeb, L.M., and Tardiff, T.J. "The Use of the Logit Model in Applied Industrial Organization," International Journal of the Economics of Business, Vol. 3, No. 1, 1996, pp. 83-105.
- Tardiff, T.J. "Incentive Regulation and Competition: The Next Generation," presented at the 27th Annual Conference of the Institute of Public Utilities at Michigan State University, Williamsburg, Virginia, December 12, 1995.
- Tardiff, T.J., "Effects of Presubscription and Other Attributes on Long-Distance Carrier Choice," Information Economics and Policy, Vol. 7, No. 4, December 1995, pp. 353-366. Also presented at the 1994 National Telecommunications Forecasting Conference, Boston, Massachusetts, May 24, 1994.
- Tardiff, T.J. and J.D. Zona, "Effects of Competitive Entry on Capital Recovery," presented at the United States Telephone Association Capital Recovery Seminar, Chicago, Illinois, October 19, 1995.
- Tardiff, T.J. and L.J. Perl, "Price Regulation and Productivity," presented to the Public Staff of the North Carolina Utilities Commission, Raleigh, North Carolina, September 6, 1995.

- Hausman, J.A. and T.J. Tardiff, "Efficient Local Exchange Competition," Antitrust Bulletin, Vol. 40, No. 3, Fall 1995, pp. 529-556.
- Instructor, "Seminar in Current Economic Issues", United States Telephone Association course, Orlando, Florida, April 3-5, 1995.
- Tardiff, T.J., W.E. Taylor, and C.J. Zarkadas, "Periodic Review of Price Cap Plans: Economic Issues," presented at the Telecommunications Policy Research Conference, Solomons, Maryland, October 2, 1994.
- Participant in AGT International Symposium on Local Interconnection Policy, Emerald Lake, British Columbia, Canada, May 27-28, 1994.
- Tardiff, T.J., "Access Charges and Toll Prices in the United States: An Economic Evaluation," Presented to representatives of Japanese Long-Distance Companies, New York, New York, May 16, 1994.
- Tardiff, T.J. and W.E. Taylor, "Telephone Company Performance Under Alternative Forms of Regulation in the U.S.," presented at the Telecommunications Policy Research Conference, Solomons, Maryland, October 4, 1993.
- Tardiff, T.J., "Interconnection and LEC Competitive Services: Pricing and Economic Efficiency," presented at the Telestrategies Conference: The Access Charge Revolution, Washington, D.C. May 18, 1993.
- Hausman, J., T. Tardiff, and A. Belinfante, "The Effects of the Breakup of AT&T on Telephone Penetration in the United States," The American Economic Review, Vol. 83, May 1993, pp. 178-184.
- Tardiff, T.J., "Assessing the Demand for New Products and Services: Theory and Practice," presented at the NRRI Conference on Telecommunications Demand for New and Existing Services, Denver, Colorado, August 6, 1992.
- Tardiff, T.J., "Price and Cost Standards for Increasingly Competitive Telecommunications Services," presented at the Ninth International Conference of the International Telecommunications Society, Sophia Antipolis, France, June 17, 1992.
- Tardiff, T.J. "Modeling The Demand For New Products and Services," presented at the NTDS Forum, Santa Fe, New Mexico, September 27, 1991.
- Tardiff, T.J. and C. Zarkadas, "Forecasting Tutorial," presented at the National Telecommunications Forecasting Conference, May 29, 1991.
- Tardiff, T.J. and W.E. Taylor, "Pricing the Competitive Services of Regulated Utilities," National Economic Research Associates, Working Paper No. 7, May 1991.
- Hausman, J.A. and T.J. Tardiff, "Growth in New Product Demand Taking into Account The Effects of Price and Competing Products: Mobile Telecommunications," Presented at the Massachusetts Institute of Technology Telecommunications Business and Economics Program Second Annual Symposium, Cambridge, Massachusetts, November 1990.

- Tardiff, T.J., "Structuring Telecommunications in Other Countries: View from the UK, Europe and Canada," Presented at the United State Telephone Association Affiliated Interest Issues Committee 1990 Fall Conference, Traverse City, Michigan, September 1990.
- Tardiff, T.J. and M.O Bidwell, Jr., "Evaluating a Public Utility's Investments: Cash Flow vs. Revenue Requirement," Public Utilities Fortnightly, May 10, 1990.
- Tardiff, T.J. and C.J. Zarkadas, "Forecasting Demand for New Services: Who, What, and When," Presented at the Bellcore/Bell Canada Demand Analysis Forum, Hilton Head South Carolina, April 1990.
- Tardiff, T.J., "Consumer Welfare with Discrete Choice Models: Implications for Flat versus Measured Local Telephone Service," Presented at the Bellcore/Bell Canada Demand Analysis Forum, Hilton Head South Carolina, April 1990.
- Tardiff, T.J., "Telephone Regulation in California: Towards Incentive Regulation and Competition," Presented to the Bell Canada Economic Council, Hull, Quebec, Canada, February 1990.
- Tardiff, T.J., "Measuring Competitiveness in Telecommunications Markets," in National Economic Research Associates, Telecommunications in a Competitive Environment. Proceeding of the Third Biennial Telecommunications Conference, Scottsdale, Arizona, April 1989, pp. 21-34.
- Hausman, J.A., T.J. Tardiff, and H. Ware, "Competition in Telecommunications for Large Users in New York," in National Economic Research Associates, Telecommunications in a Competitive Environment. Proceeding of the Third Biennial Telecommunications Conference, Scottsdale, Arizona, April 1989, pp. 1-19.
- Perl, L.J. and T.J. Tardiff, "Effects of Local Service Price Structures on Residential Access Demand," Presented at the International Telecommunications Society North American Regional Meeting, Ottawa, Ontario, Canada, June 1989.
- Tardiff, T.J. and W.E. Taylor, "Costing Principles for Competitive Assessment," in Telecommunications Costing in a Dynamic Environment, Proceedings of the Bellcore-Bell Canada Conference on Telecommunications Costing, 1989, pp. 497-518.
- Tardiff, T.J., "Forecasting the Impact of Competition for Local Telephone Services."
 Presented at the Bellcore National Forecasting Conference, New Orleans, April 1987.
- Tardiff, T.J., "Is Bypass Still a Threat," in National Economic Research Associates, Telecommunications in a Competitive Environment. Proceedings of Conference held in Scottsdale, Arizona, March 1987, pp. 27-41.
- Tardiff, T.J., "Benefit Measurement with Customer Choice Models." Presented at the Bellcore Telecommunications Demand Modeling Conferences, New Orleans, October 1985.
- Tardiff, T.J., "The Economics of Bypass," Presented at the Bellcore Competitive Analysis and Bypass Tracking Conference. Denver, March 1985.

- Tardiff, T.J., "Class of Service Choice Model." Presented at the Telecommunications Marketing Forum. Chicago, September 1984.
- Tardiff, T.J., "Demand for New Telecommunications Product and Services." Presented at the Fifth International Conference on Futures Analyses, Forecasting and Planning for Telecommunications. Vancouver, July 1984.
- Tardiff, T.J., "Pricing and Marketing in the Competitive Local Access Market." In Present and Future Pricing Issues in Electric, Gas, and Telecommunications Industry. Proceeding of the Ninth Annual Rate Symposium on Problems of Regulated Industries. Columbia: University of Missouri, 1983.
- Tardiff, T.J., J. Hausman and A. Baughcum, "The Demand for Optional Local Measured Service." In Adjusting to Regulatory, Pricing and Marketing Realities. Proceedings of the Fourteenth Annual Conference of the Institute of Public Utilities. East Lansing: Michigan State University, 1983.
- Tardiff, T.J., W.B. Tye, L. Sherman, M. Kinnucan, and D. Nelson, Application of Disaggregate Travel Demand Models. National Cooperative Highway Research Program Report 253, 1982.
- Tardiff, T.J., D. Wyckoff, and B. Johnson, "Shippers' Preferences for Trucking Services: An Application of the Ordered Logit Model." Proceedings of the Transportation Research Forum, Vol. 23, 1982.
- Tardiff, T.J., P. M. Allaman, and F. C. Dunbar, New Approaches to Understanding Travel Behavior. National Cooperative Highway Research Program Report 250, 1982.
- Tardiff, T.J., E. Ziering, J. Benham and D. Brand, "Energy Impacts of Transportation System Improvements." Transportation Research Record 870: 10-15, 1982.
- Tardiff, T.J. and O.S. Scheffler, "Destination Choice Models for Shopping Trips in Small Urban Areas." Proceedings of the Transportation Research Forum, Vol. 22, 1982.
- Tardiff, T.J., J.L. Benham and S. Greene, Methods for Analyzing Fuel Supply Limitations on Passenger Travel. National Cooperative Highway Research Program Report 229, 1980.
- Tardiff, T.J., "Vehicle Choice Models: Review of Previous Studies and Directions for Further Research." Transportation Research 14A: 327-336, 1980.
- Tardiff, T.J., "Specification Analysis for Quantal Choice Models." Transportation Science 13: 179-190.
- Tardiff, T.J., "Attitudinal Market Segmentation for Transit Design, Marketing and Policy Analysis." Transportation Research Record 735: 1-7, 1979.
- Tardiff, T.J., "Definition of Alternatives and Representation of Dynamic Behavior in Spatial Choice Models." Transportation Research Record 723: 25-30, 1979.
- Tardiff, T.J., "Use of Alternative Specific Constants in Choice Modeling." Institute of Transportation Studies, University of California, Berkeley and Irvine, Report No. UCI-ITS-SP-78-6, December 1978.

- Tardiff, T.J. and G.J. Fielding, "Relationship Between Social-Psychological Variables and Individual Travel Behavior." Proceedings of the Transportation Research Forum, Vol. 19, 1978.
- Tardiff, T.J., T.N. Lam, and B.F. Odell, "Effects of Employment and Residential Location Choices on Urban Structure: A Dynamic Stochastic Simulation." Transportation Research Record 673: 86-93, 1978.
- Tardiff, T.J., "Casual Inferences Involving Transportation Attitudes and Behavior." Transportation Research 11: 397-404, 1977.
- Tardiff, T.J., "A Note on Goodness of Fit Statistics for Probit and Logit Models." Transportation 5: 377-388, 1976.
- Tardiff, T.J., "The Effects of Socioeconomic Status on Transportation Attitudes and Behavior." Ph.D. Dissertation, School of Social Science, University of California, Irvine, 1974.

Professional associations

- Member, American Economic Association
- Associate Member, American Bar Association
- Member, Federal Communications Bar Association

Fellowships, grants and awards

- First Place, Dissertation Contest of the Transportation Science Section of the Operations Research Society of America.
- National Science Foundation (NSF) Research Initiation Grant (Engineering Division), 1976-1978.
- NSF Grant for Improving Doctoral Dissertation Research in the Social Sciences, 1973-1974.
- NSF Predoctoral Fellowship, 1972-1974.
- Public Health Service Traineeship, 1971-1972.

Exhibit 1

Allegheny Power - PORDINVER ENDISON AGREEMENT 57352

THIS AGREEMENT, Made this Seventeenth day of March , 1959, by and between THE POTOMAC EDISON COMPANY a corporation of the State of Maryland, hereinafter called the ELECTRIC COMPANY, party of the first part, and THE CHESAPEAKE AND POTOMAC TELEPHONE COMPANY OF MARYLAND, a corporation of the State of Maryland, hereinafter called the TELEPHONE COMPANY, party of the second part.

WITNESSETH, Whereas the ELECTRIC COMPANY and the TELEPHONE COMPANY desire to provide for the joint use of their respective poles when and where such joint use is desirable in meeting their service requirements.

NOW, THEREFORE, in consideration of the premises and the mutual covenants herein contained, the parties hereto, for themselves, their successors, and assigns, do hereby covenant and agree as follows:

ARTICLE I

SCOPE OF AGREEMENT

(a) This agreement shall be in effect in the following described territory:

Areas of the State of Maryland where both parties operate, and shall cover all poles of each of the parties now existing or hereafter erected in the above territory when said poles are brought hereunder in accordance with the procedure hereinafter provided.

- (b) Each party reserves the right to exclude from joint use,
 - Poles which in the Owner's judgment are necessary for its own sole use; and
 - Poles which carry, or are intended by the Owner to carry, circuits of such a character that in Owner's judgment, the proper rendering of its service now or in future, makes joint use of such poles undesirable.
- (c) This agreement shall automatically, and without further procedure of any kind, be applicable to all poles jointly used by the parties hereto at the time of the execution hereof.

ARTICLE II

EXPLANATION OF TERMS

For the purpose of this agreement, the following terms shall have the following meanings:

A NORMAL JOINT POLE under this agreement shall be a 40-foot, class 4 wood pole as covered by American Standards Association specifications. It is not intended to preclude the use of joint poles shorter or of less strength than the normal joint pole in locations where such poles will meet the requirements of the parties hereto and the specifications mentioned in Article III.

NORMAL SPACE on a normal joint pole is the following described space for the exclusive use of each party, respectively, except that certain attachments of one-party may in accordance with the specification mentioned in Article III be located in space assigned to the other party:

- (1) For the ELECTRIC COMPANY, the uppermost 8 feet, measured from top of pole.
- (2) For the TEIRPHONE COMPANY, a space of 3 feet at such distance below the space of the EIECTRIC COMPANY as to provide at all times the minimum clearances and separations required by the specifications mentioned in Article III.

Where a pole shorter than a normal joint pole is used the space will be reduced for each company to meet the needs on such shorter pole.

COST as applied to new poles shall mean the cost in place. As applied to existing poles "cost" shall mean the reproduction cost less depreciation.

NET LOSS as applied to pole replacements shall mean the reproduction cost less depreciation, plus the cost of removal minus the salvage value of the pole replaced.

ARTICLE III

SPECIFICATIONS

All construction in connection with the joint use of the poles covered by this agreement shall be in conformity with the specifications attached hereto and hereby made a part hereof, except that in Paragraph 19.05 of said specifications the term "50 per cent." shall be changed to read "33-1/3 per cent." These specifications may from time to time be subsequently revised as agreed upon by representatives designated by the parties hereto.

ARTICLE IV

ESTABLISHING JOINT USE OF EXISTING POLES

(a) Whenever either party desires to reserve space for its attachments on any pole owned by the other party, either as initial space or additional space on said pole, it shall make written application therefor, specifying the location of the poles in question, the amount of space desired, and the number and character of the circuits to be placed therein. Within 10 days after the receipt of such application the Owner shall notify the Applicant in writing whether or not said pole is among those excluded from joint use under the provisions of Article I - Scope. Upon receipt of notice from the Owner that the said pole is not among those excluded and after the completion of any transferring or rearranging which is then required in respect to attachments on said poles, including any necessary pole replacements, the Applicant shall have the right as Licensee hereunder to use said space for attachments and circuits of the character specified in said application in accordance with the terms of the application and of this agreement.

- (b) Whenever any jointly-used pole or any pole about to be so used under the provisions of this agreement, is insufficient in height or strength for the existing attachments and for the proposed immediate additional attachments thereon, the Owner shall promptly replace such pole with a new pole of the necessary height and strength and shall make such other changes in the existing pole line in which such pole is included as the conditions may then require.
- (c) On joint poles each party shall place, transfer, and rearrange its own attachments, including any tree trimming or cutting incidental thereto, place guys to sustain unbalanced loads due to its equipment, and shall perform such work promptly and in such manner as not to interfere with the service of the other party.

ARTICLE V

ESTABLISHING JOINT USE OF NEW POLES

- (a) Whenever either party hereto requires new pole facilities within the territory covered by this agreement, either as an additional pole line, as an extension of an existing pole line, or in connection with the reconstruction of an existing pole line, and such pole facilities are not to be excluded from joint use under the provisions of Article I Scope, it shall promptly notify the other party to that effect in writing (verbal notice subsequently confirmed in writing, may be given in cases of emergency) stating the proposed location and character of the new poles and the character of circuits it proposes to use thereon. Within 10 days after the receipt of such notice, the other party shall reply in writing, stating whether it does, or does not, desire space on the said poles and, if it does, the character of the circuits it desires to use and the amount of space it wishes to reserve. It is understood, of course, that shorter time intervals would be followed as necessary in those cases of relatively short extensions for individual customers when service is required promptly.
- (b) In any case where the parties hereto shall conclude arrangements for the joint use of any new poles to be erected, and the party proposing to construct the new pole facilities already owns more than its proportionate share of joint poles, the parties shall take into consideration the desirability of having the new pole facilities owned by the party owning less than its proportionate share of joint poles so as to work towards such a division of ownership of the joint poles that neither party shall be obligated to pay to the other any rentals because of their respective use of joint poles owned by the other; provided however, that the construction may be completed by either party, after mutual agreement, even though this may further unbalance the ownership of jointly-used poles.
- (c) Each party shall place its own attachments on the new joint poles, including any tree trimming or cutting incidental thereto, place guys to sustain unbalanced loads due to its equipment, and shall perform such work promptly and in such manner as not to interfere with the service of the other party.

ARTICLE VI

RIGHTS OF WAY FOR NEW JOINT POLES

When the Owner erects a new pole for joint use (other than as a replacement of an existing joint use pole in the same general location) it shall obtain the private right-of-way permission, including the Licensee's attachments, as an easement right if possible, unless the pole is erected within the right of way of a publicly-owned street or highway. It is understood that all such new poles erected will generally be outside the right of way of the highway unless unreasonable costs are encountered in obtaining such right-of-way permission.

ARTICLE VII

MAINTENANCE OF POLES AND ATTACHMENTS

- (a) The Owner shall maintain its joint poles in a safe and serviceable condition and in accordance with the specifications mentioned in Article III and shall replace, reinforce, or repair such of said poles as become defective.
- (b) When replacing a jointly-used pole carrying terminals of aerial cable, underground connections, or transformer equipment, the new pole shall be set in the same hole which the replaced pole occupied unless special conditions make it necessary to set it in a different location.
- (c) Whenever it is necessary to replace or relocate a jointly-used pole, the Owner shall before making the change give notice thereof in writing (except in case of emergency, when verbal notice will be given and subsequently confirmed in writing) to the Licensee, and the Licensee shall transfer its attachments to the new or relocated pole.
- (d) Each party shall maintain all of its attachments on jointly-used poles in accordance with the specifications mentioned in Article III and shall keep them in safe condition and in thorough repair.

ARTICLE VIII

DIVISION OF COSTS

- (a) The cost in place of new joint poles coming under this agreement, either in new pole lines, or in extensions of existing pole lines, or to replace existing poles, shall be borne by the parties as follows, except as provided in Article XI (b) (3):
 - 1. The cost in place of a normal joint pole or a joint pole shorter or of less strength than normal shall be borne by the Owner.
 - 2. The cost in place of a pole larger than normal, the extra height or class of which is due wholly to the Owner's requirements shall be borne by the Owner.
 - 3. In the case of a pole larger than normal where the extra height or strength is due either wholly or in part to the requirements of the Licensee, the Licensee shall pay to the Owner costs in excess of those borne by the Owner under 1 or 2.

- 4. The cost of rearranging existing facilities including installation of additional poles to make a pole line suitable for joint use shall be borne by the Licensee.
- 5. In the case where an existing pole is replaced to make it suitable for joint use, the cost of transferring existing facilities to the new pole shall be borne by the Licensee.
- (b) The net loss entailed in the replacement of existing poles with new joint poles shall be borne as follows:
 - 1. The net loss entailed in the replacement of a nonjoint pole by a joint pole shall be borne by the Licensee.
 - 2. The net loss entailed in the replacement of joint poles shall be borne by the Owner unless the replacement is for the immediate additional equipment or attachments of the Licensee in which case the loss shall be borne by the Licensee.
- (c) Any payments made by the Licensee under the foregoing provisions of this article shall not in any way affect the ownership of the joint poles concerned.
- (d) Each party shall place, maintain, rearrange, transfer, and remove its own attachments at its own expense, except as otherwise expressly provided elsewhere in this agreement.
- (e) Other arrangements for the division of costs of joint poles in specific situations may be made if mutually agreeable and approved in writing by the parties hereto.

ARTICLE IX

PROCEDURE WHEN SYSTEMS, OPERATIONS, OR CIRCUITS ARE CHANGED

When either party hereto contemplates changing its system, its method of operation or the character of any of its circuits attached to a pole line that is jointly used hereunder, it will make known its intentions to the other party and the parties hereto will then cooperate in determining whether or not joint use is to be continued under the proposed conditions or terminated.

If it is decided that joint use is to be discontinued the parties will cooperate in determining and carrying out those methods which provide the best engineering solution in each case and, to this end, information pertaining to each case will be interchanged freely and completely between the parties. The party whose circuits are to be removed from the jointly used poles will carry out the work promptly and, unless otherwise agreed in such cases, the Licensee will bear the net cost of removal.

ARTICLE X

TERMINATION OF JOINT USE

- (a) If the Owner desires at any time to discontinue using any jointly-used pole, it shall give the Licensee notice in writing to that effect at least 60 days prior to the date on which it intends to remove its attachment from such pole. If at the expiration of said period, the Owner shall have no attachments on such pole but the Licensee shall not have removed all of its attachments therefrom, such pole shall thereupon become the property of the Licensee, and the Licensee shall save harmless the former Owner of such pole from all obligations, liabilities, damages, costs, expenses, or charges incurred thereafter, and not arising out of anything theretofore occurring, because of, or arising out of, the presence or condition of such pole or of any attachments thereon; and shall pay the Owner a sum equal to the then value in place of such abandoned pole or such other equitable sum as may be agreed upon between the parties.
- (b) The Licensee may at any time discontinue the use of a joint pole by giving due notice thereof in writing to the Owner and by removing therefrom any and all attachments it may have thereon. The Licensee shall in such case pay to the Owner the full rental for said pole for the then current year.

ARTICLE XI

RENTALS

- (a) The rentals due from either party to the other shall be computed on the basis of \$3.50 per annum to be paid by the ELECTRIC COMPANY for each joint pole owned by the TELEPHONE COMPANY and \$3.50 per annum to be paid by the TELE-PHONE COMPANY for each joint pole owned by the ELECTRIC COMPANY.
- (b) (1) No rental shall be paid by the Licensee for the use of any pole of the Owner where such use consists in attaching thereto, either directly or by pole-top extension fixture, the wires or cables of the Licensee for the sole purpose of providing the most satisfactory separation between the facilities of the Licensee and the facilities of the Owner (and not for the purpose of supporting the said wires or cables, nor for the purpose of providing the required clearances above ground, paving, tracks, buildings, etc.).
- (2) No rental shall be paid by the Licensee where the sole use by the Licensee of the Owner's pole is for the purpose of attaching guys.
- (3) In the case of the attachments described in (1) or (2) immediately above, the Licensee shall make payment to the Owner for the net cost (i.e., cost of new pole, less expired life of old, plus cost of removal, less salvage) involved in the event a replacement of the pole is required to provide space or strength for the attachment by the Licensee.
- (c) Rental payments hereunder shall cover rentals accruing during the calendar year and shall be based on the number of poles on which space is occupied or reserved on the last day of December of the prior year. Within 60 days following such date, each party shall submit a written statement to the other party giving the number of poles on which space was occupied by, or reserved for, the other party, as of such date. Rental payments shall be made within 10 days of the receipt of such statement.

ARTICLE XII

PERIODICAL READJUSTMENT OF RENTALS

At the expiration of 2 years from the date of this agreement, and at the end of every 1-year period thereafter, the rental per pole per annum thereafter payable hereunder may be readjusted by the mutual agreement, in writing, of the parties hereto, at the request of either party made in writing to the other not later than 30 days before the end of the said 2-year and 1-year periods.

ARTICLE XIII

DEFAULTS

- (a) If either party shall default in any of its obligations under this contract and such default continues thirty (30) days after notice thereof in writing by the other party, the party not in default may suspend the rights of the party in default in so far as concerns the granting of further joint use. If such default shall continue for a period of 60 days after such suspension, the party not in default may forthwith terminate this agreement as far as concerns the further granting of joint use.
- (b) If either party shall make default in the performance of any work which it is obligated to do under this contract at its sole expense, the other party may elect to do such work, and the party in default shall reimburse the other party for the cost thereof. Failure on the part of the defaulting party to make such payment within 60 days upon presentation of bills therefor, shall at the election of the other party, constitute a default under Section (a) of this Article.

ARTICLE XIV

LIABILITY AND DAMAGES

Whenever any liability is incurred by either or both of the parties hereto, for damages, for injuries to the employees or for injury to the property of either party, or for injuries to other persons or their property, arising out of the joint use of poles under this agreement, or due to the proximity of the wires and fixtures of the parties hereto attached to the jointly-used poles covered by this agreement, the liability for such damages, as between the parties hereto, shall be as follows:

- (a) Each party shall be liable for all damages for such injuries to persons or property caused solely by its negligence or solely by its failure to comply at any time with the specifications herein provided for.
- (b) Each party shall be liable for all damages for such injuries to its own employees or its own property as are caused by the concurrent negligence of both parties hereto or that are due to causes which cannot be traced to the sole negligence of the other party.

- (c) In the case of damages for such injuries to persons other than employees of either party, and/or damages for such injuries to property not belonging to either party that are caused by the concurrent negligence of both parties hereto or that are due to causes which cannot be traced to the sole negligence of one party, the ELECTRIC COMPANY shall be liable for 50% of said damages and the TELEPHONE COMPANY shall be liable for 50% of said damages.
- (d) Where, on account of injuries of the character described in the preceding paragraphs of this article, either party hereto shall make any payments to injured employees or to their relatives or representatives in conformity with, (1) the provision of any workmen's compensation act or any act creating a liability to the employer to pay compensation for personal injury to an employee by accident arising out of and in the course of the employment, whether based on negligence on part of the employer or not, or, (2) any plan for employees' disability benefits or death benefits now established or hereafter adopted by the parties hereto or either of them, such payment shall be construed to be damages within the terms of the preceding paragraphs numbered (a) and (b) and shall be paid by the parties hereto accordingly.
- (e) All claims for damages arising hereunder that are asserted against or affect both parties hereto shall be dealt with by the parties hereto jointly; provided, however, that in any case under the provisions of paragraph (c) of this article where the claimant desires to settle any such claim upon terms acceptable to one of the parties hereto but not to the other, the party to which said terms are acceptable may, at its election: if the EIECTRIC COMPANY, pay to the TEIEPHONE COMPANY 50% of the expense which such settlement would involve, or if the TEIEPHONE COMPANY, pay to the EIECTRIC COMPANY 50% of the expense which such settlement would involve, and thereupon said other party shall be bound to protect the party making such payment from all further liability and expense on account of such claim.
- (f) In the adjustment between the parties hereto of any claim for damages arising hereunder, the liability assumed hereunder by the parties shall include, in addition to the amounts paid to the claimant, all special expenses incurred by the parties in particular connection therewith, which shall comprise court costs, attorneys' fees, disbursements, and other proper charges and expenditures, but shall not include any compensations to any officer or regular employee of the parties hereto or any other regular or usual disbursement or expenditure.

ARTICLE XV

EXISTING RIGHTS OF OTHER PARTIES

If either of the parties hereto has, prior to the execution of this agreement, conferred upon others, not parties to this agreement, by contract or otherwise, rights or privileges to use any poles covered by this agreement, nothing herein contained shall be construed as affecting such rights or privileges, and either party hereto shall have the right, by contract or otherwise, to continue and extend such existing rights or privileges; it being expressly understood, however, that for the purpose of this agreement, the attachments of any such outside party, except those of a municipality or other public authority, shall be treated as attachments belonging to the grantor, and the rights, obligations, and liabilities hereunder of the grantor in respect to such attachments shall be the same as if it were the actual owner thereof.

ASSIGNMENT OF RIGHTS

ARTICLE XVI

Except as otherwise provided in this agreement, neither party hereto shall assign nor otherwise dispose of this agreement or any of its rights or interest hereunder, or in any of the jointly used poles, or the attachments or rights of way covered by this agreement, to any firm, corporation, or individual, without the written consent of the other party; provided, however, that nothing herein contained shall prevent or limit the right of either party to mortgage any or all of its property, right, privileges, and franchises, or lease or transfer any of them to another corporation organized for the purpose of conducting a business of the same general character as that of such party, or to enter into any merger or consolidation; and, in case of the foreclosure of such mortgage; or in case of such lease, transfer, merger, or consolidation, its rights and obligations hereunder shall pass to, and be acquired and assumed by, the purchaser on foreclosure, the transferee, lessee, assignee, merging or consolidating company, as the case may be; and provided, further, that subject to all of the terms and conditions of this agreement, either party may permit any corporation conducting a business of the same general character as that of such party, and owned, operated, leased, and controlled by it, or associated, or affiliated with it in interest, or connecting with it, the use of all or any part of the space reserved hereunder on any pole covered by this agreement for the attachments used by such party in the conduct of its said business; and for the purpose of this agreement, all such attachments maintained on any such pole by the permission as aforesaid of either party hereto shall be considered as the attachments of the party granting such permission, and the rights, obligations and liabilities of such party under this agreement, in respect to such

ARTICLE XVII

attachments, shall be the same as if it were the actual owner thereof.

WAIVER OF TERMS OR CONDITIONS

The failure of either party to enforce or insist upon compliance with any of the terms or conditions of this agreement shall not constitute a general waiver or relinquishment of any such terms or conditions, but the same shall be and remain at all times in full force and effect.

ARTICLE XVIII

PAYMENT OF TAXES

Each party shall pay all taxes and assessments lawfully levied on its own property upon said jointly-used poles, and the taxes and the assessments which are levied on said jointly-used poles shall be paid by the Owner thereof, except that any tax, fee, or charge levied on Owner's poles solely because of their use by the Licensee, shall be paid by the Licensee.

57352

ARTICLE XIX

BILLS AND PAYMENT FOR WORK

Upon the completion of work performed hereunder by either party, the expense of which is to be borne wholly or in part by the other party, the party performing the work shall present to the other party within 30 days after the completion of such work an itemized statement of the costs and such other party shall within 30 days after such statement is presented to pay to the party doing the work such other party's proportion of the cost of said work.

ARTICLE XX

SERVICE OF NOTICES

Whenever in this agreement notice is provided to be given by either party hereto to the other, such notice shall be in writing and given by letter mailed, or by personal delivery, to the ELECTRIC COMPANY at its office at Hagerstown, Maryland, or to the TELEPHONE COMPANY at its office at Hagerstown, Maryland, as the case may be, or to such other address as either party may from time to time designate in writing for that purpose.

ARTICLE XXI

TERM OF AGREEMENT

Subject to the provisions of Article XIII - Defaults, herein, this agreement may be terminated, so far as concerns further granting of joint use by either party, after the first day of January 1963, upon one (1) year's notice in writing to the other party provided, that if not so terminated it shall continue in force thereafter until terminated by either party at any time upon one year's notice in writing to the other party as aforesaid, and provided further that notwithstanding such termination, this agreement shall remain in full force and effect with respect to all poles jointly used by the parties at the time of such termination.

ARTICLE XXII

EXISTING CONTRACTS

All existing agreements between the parties hereto for the joint use of poles upon a joint-ownership or joint-use basis within the territory covered by this agreement are, by mutual consent, hereby abrogated and annulled.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed in duplicate, and their corporate seals to be affixed thereto by their respective officers thereunto duly authorized, on the day and year first above written.

(Seal)

mi][

By Mice President

The Potomac Edison Company

By Mice President

Ass't. Secretary

(Seal) Attest

APPTOVED AS TO FORM

FORM APPROVED

THE CHESAPEAKE & POTOMAC TELEPHONE COMPANY

OF MARYLAND

Vice President

57355

57352



800 Cabin Hili Drive Greensburg, PA 15601-1689 (724) 837-3000

May 11, 1998

Bell Atlantic - Virginia, Inc. 3011 Hungary Springs Rd. 2nd Floor Richmond, Va. 23261

Attn: Donald Cameron

RE: Pole Attachments Agreements

Bell Atlantic and The Potomac Edison Company

After review and consideration of the pole rental rates provided under terms and conditions of agreements between Bell Atlantic and The Potomac Edison Company it is mutually agreed to adjust annual rates to reflect present day values and cost.

Preliminary review indicates rental rates for Maryland, Virginia and West Virginia as follows:

	Bell Atlantic Rate	Potomac Edison Rate	Rate Effective Date
Maryland			January 1, 1997
Virginia			January 1, 1997
West Virginia			January 1, 1997

Due to the time required to review data and the need to document the source of data utilized in preparing fair and equitable rental rates, it is hereby agreed to prepare and process net rental billings for attachments in Maryland, Virginia and West Virginia as shown above with adjustments for final agreed upon rental rates upon completion of documentation and review.

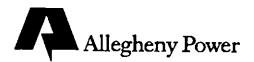
Please show your acceptance of proposed by signing on appropriate line and returning one copy to me for our files.

The Potomac Edison Company dba, Allegheny Power

Bell Atlantic -Maryland, Inc. Bell Atlantic - Virginia, Inc Bell Atlantic- West Virginia, Inc.

By: Manager-Contracts/Agreements

Ronald L. Duncil



800 Cabin Hill Drive Greensburg, PA 15601-1689 (724) 837-3000

September 21, 1998

Bell Atlantic - Virginia, Inc.

3011 Hungary Springs Rd. 2nd Floor

Richmond, Va. 23261

Attn: Donald Cameron

RE: The Potomac Edison Company

Pole Rental Rates

A review of May 11, 1998 amendment to General Joint Pole Use Agreements between The Potomac Edison Company and Bell Atlantic - Virginia, Bell Atlantic - Maryland and Bell Atlantic - West Virginia indicates a misunderstanding of the effective date of rental rate change. Therefore, it is hereby agreed that the pole rental rates and the effective date of rental adjustment for each of the before mentioned agreements shall be as follows:

	Bell Atlantic Rate	Potomac Ediso	n Rate Effective Date
Maryland			January 1, 1998
Virginia			January 1, 1998
West Virginia			January 1, 1998

It is further agreed that such rental rates shall remain in effect until such time that rates are again reviewed and updated as provided for under Article XII of each of the above mentioned General Joint Pole Use Agreements.

The Potomac Edison Company dba, Allegheny Power

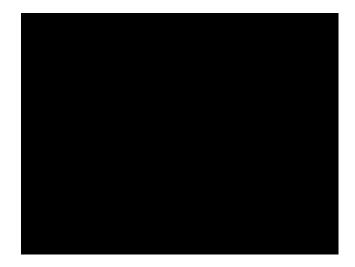
Bell Atlantic - Maryland, Inc Bell Atlantic - Virginia, Inc. Bell Atlantic - West Virginia, Inc.

Team Leader, Real Estate

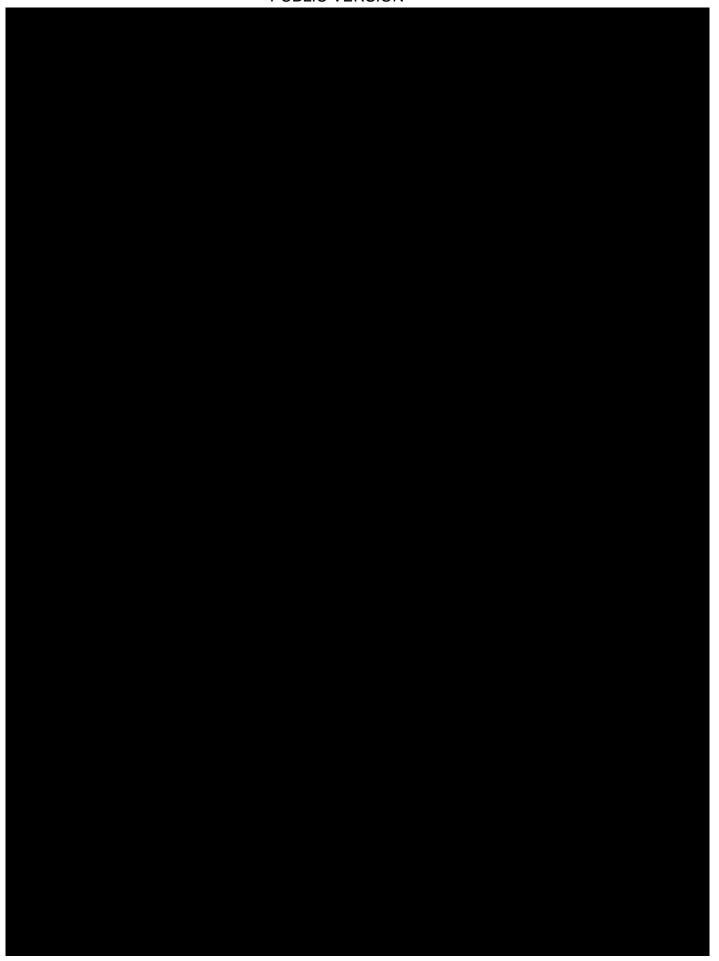
Manager – Contracts/Agreements

Please show your company's acceptance of above statements by signing and returning one copy to me for Potomac Edison's file.

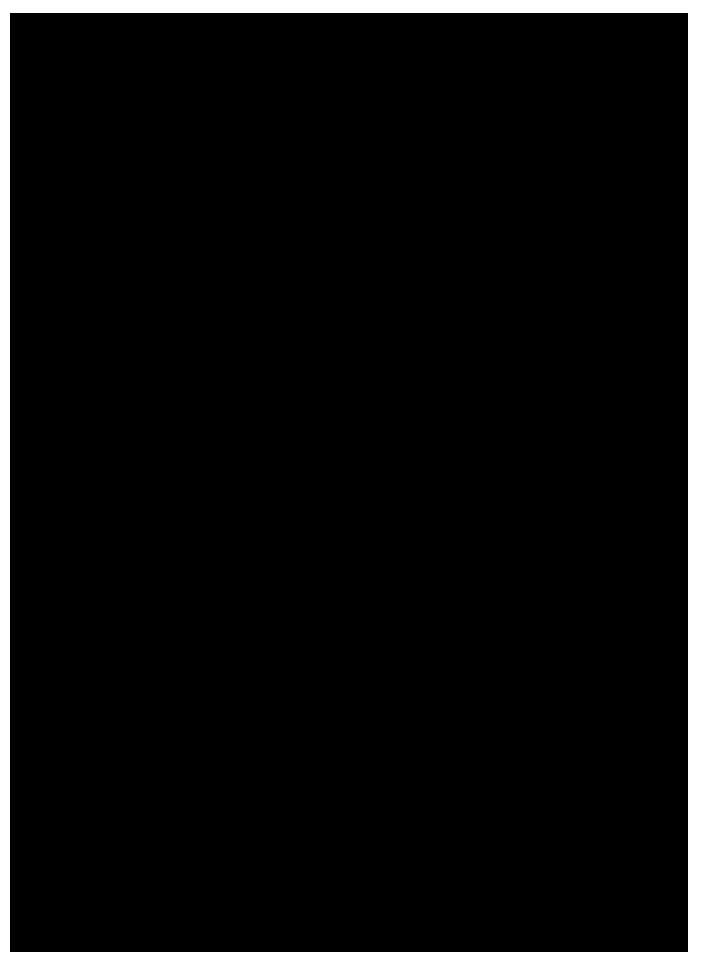
Exhibit 2

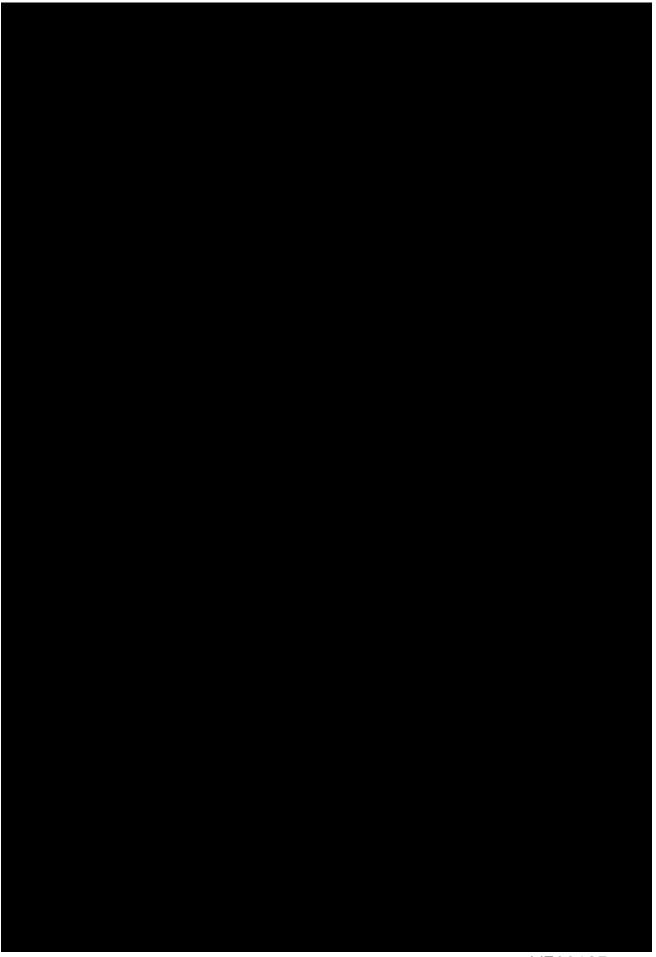




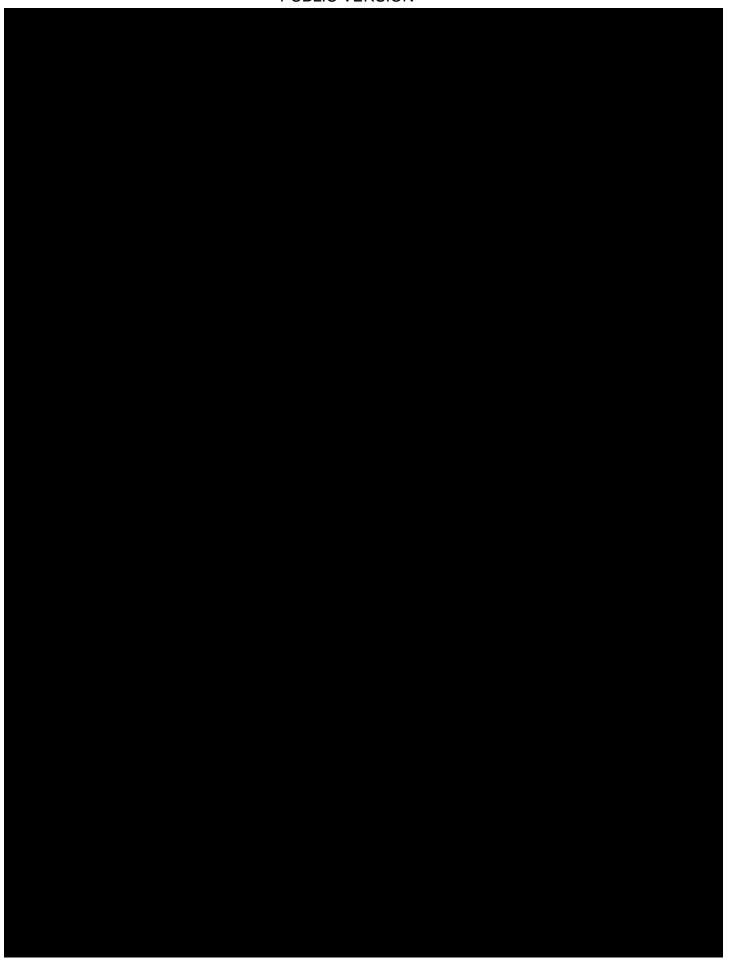


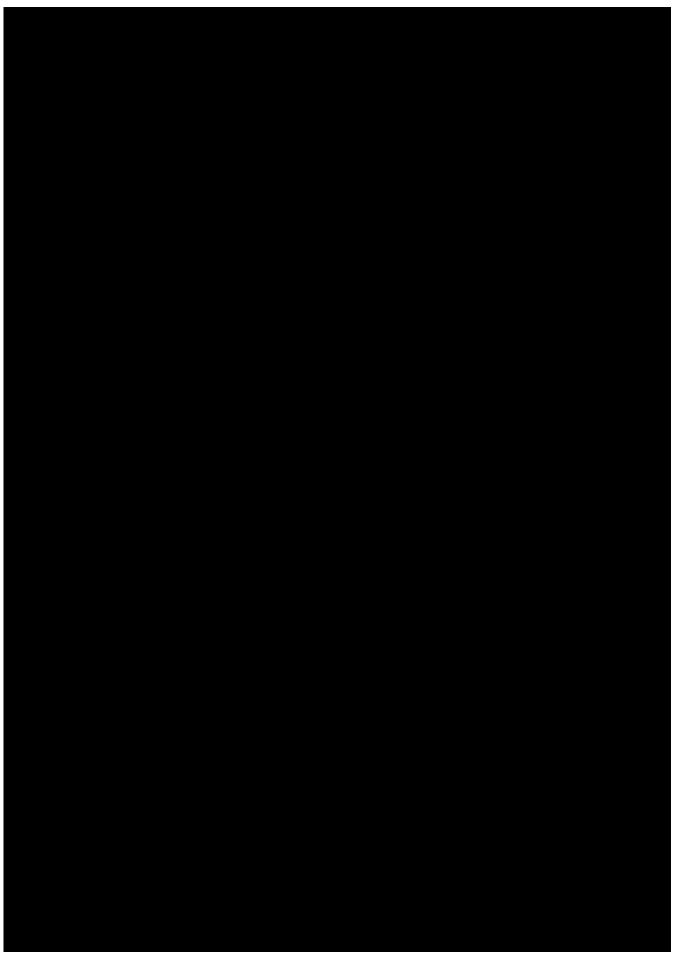


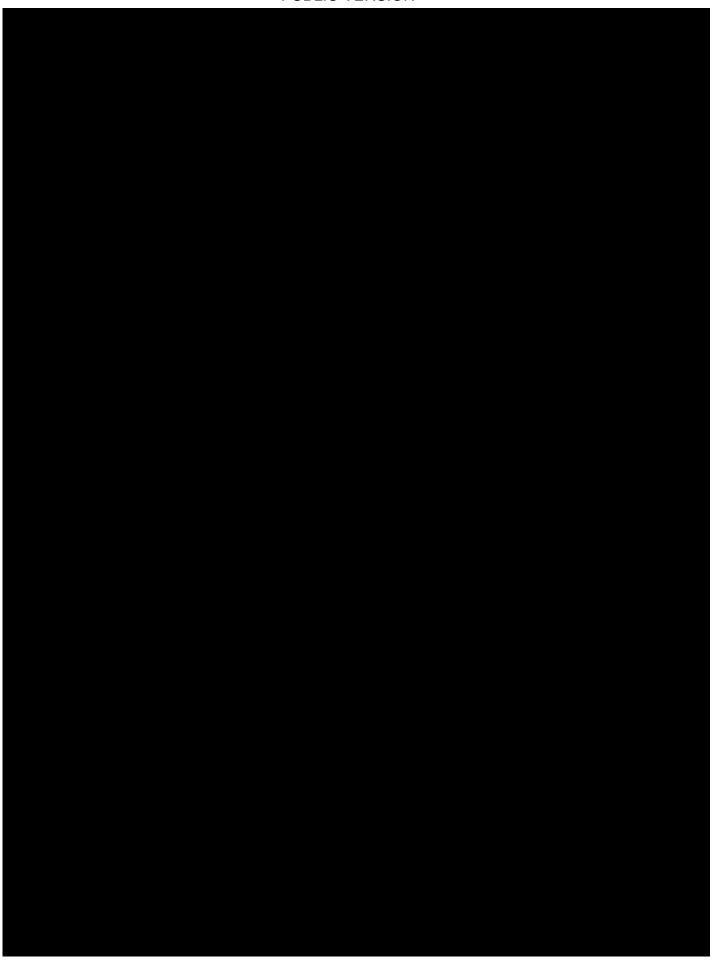


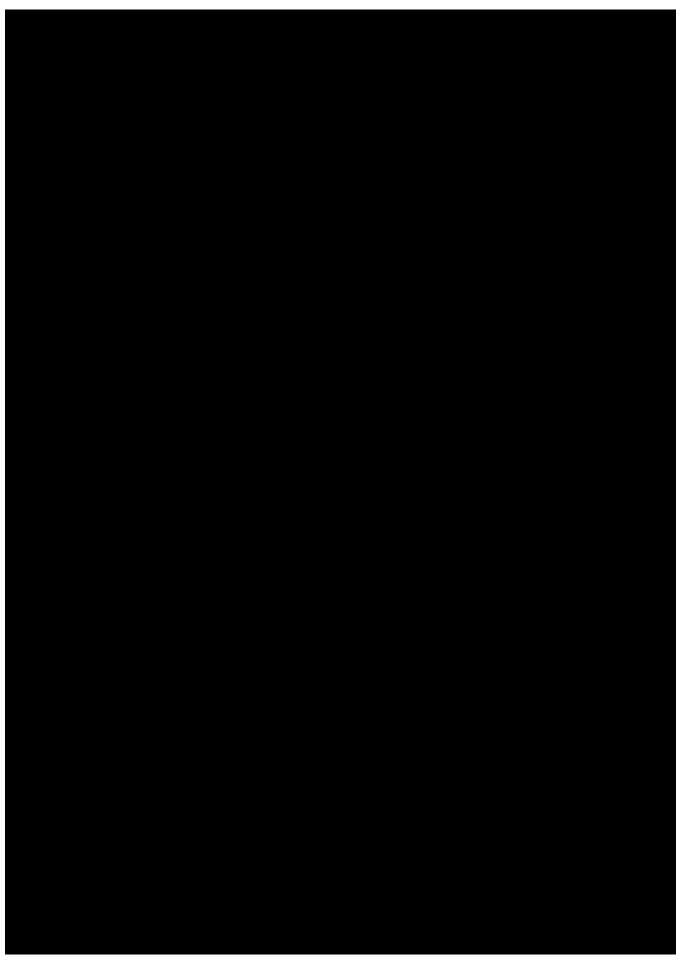


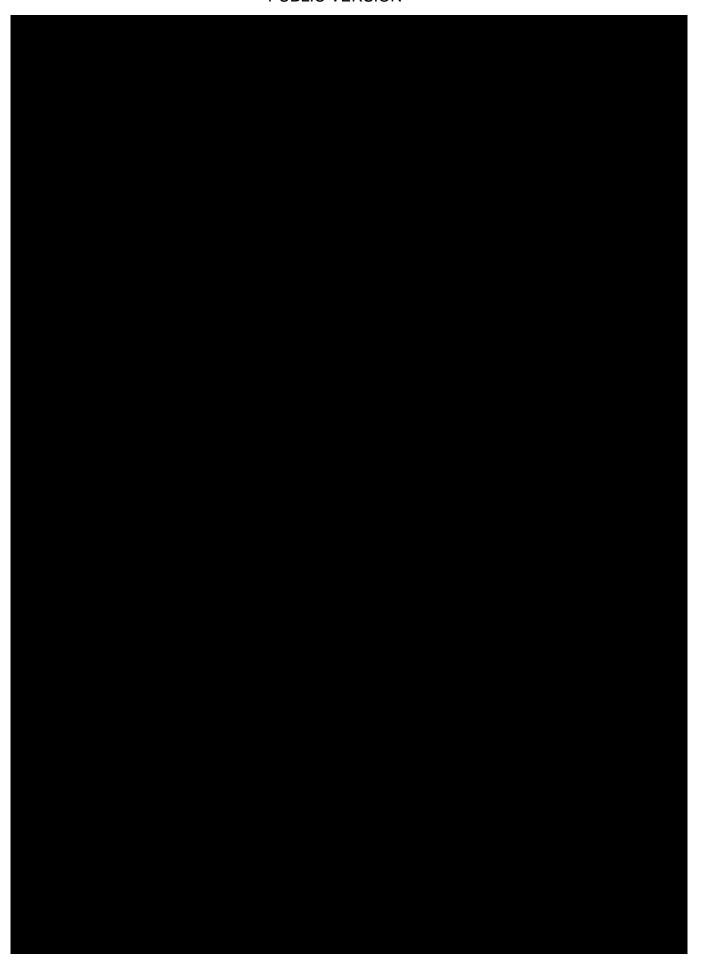


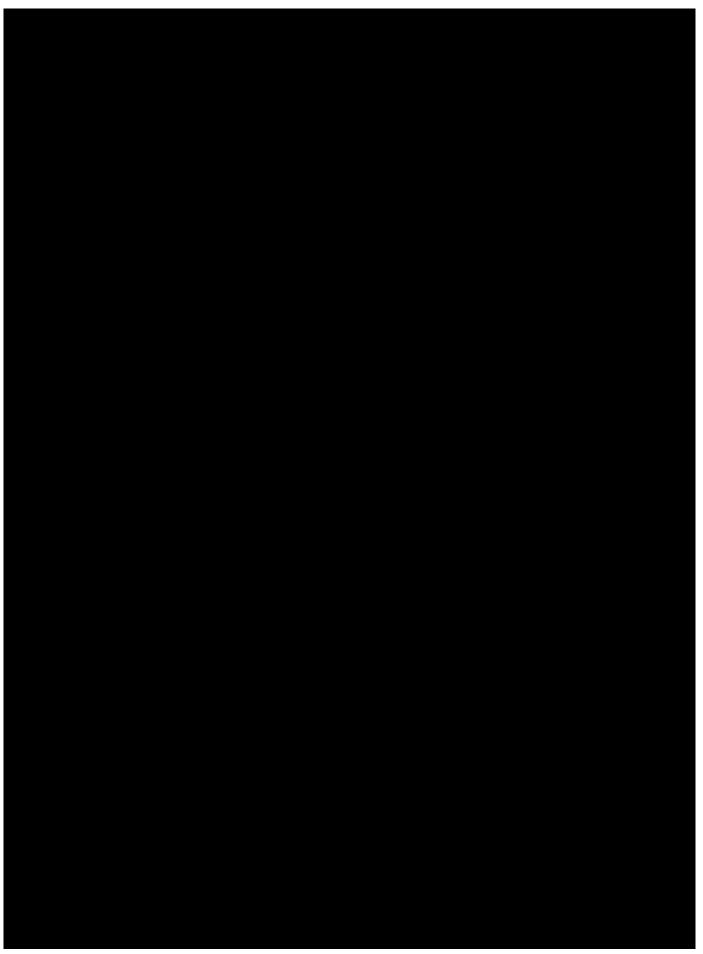


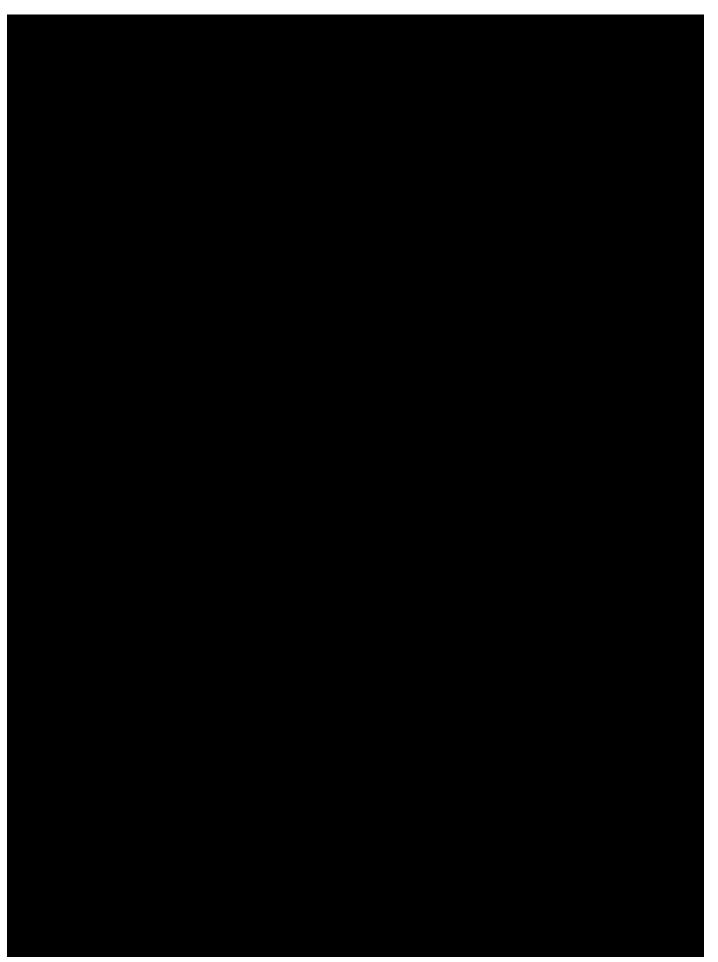


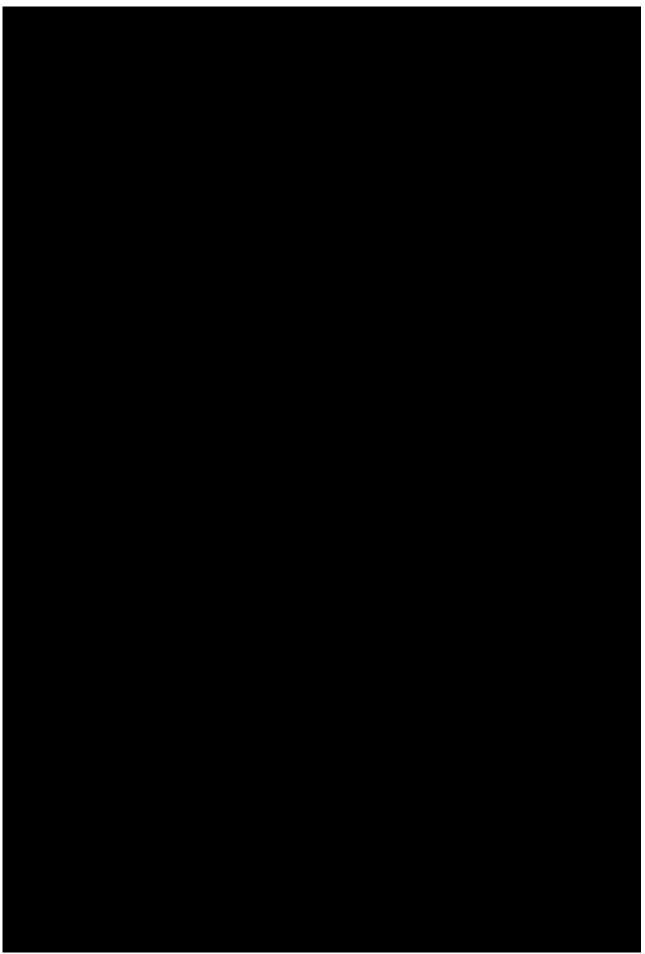


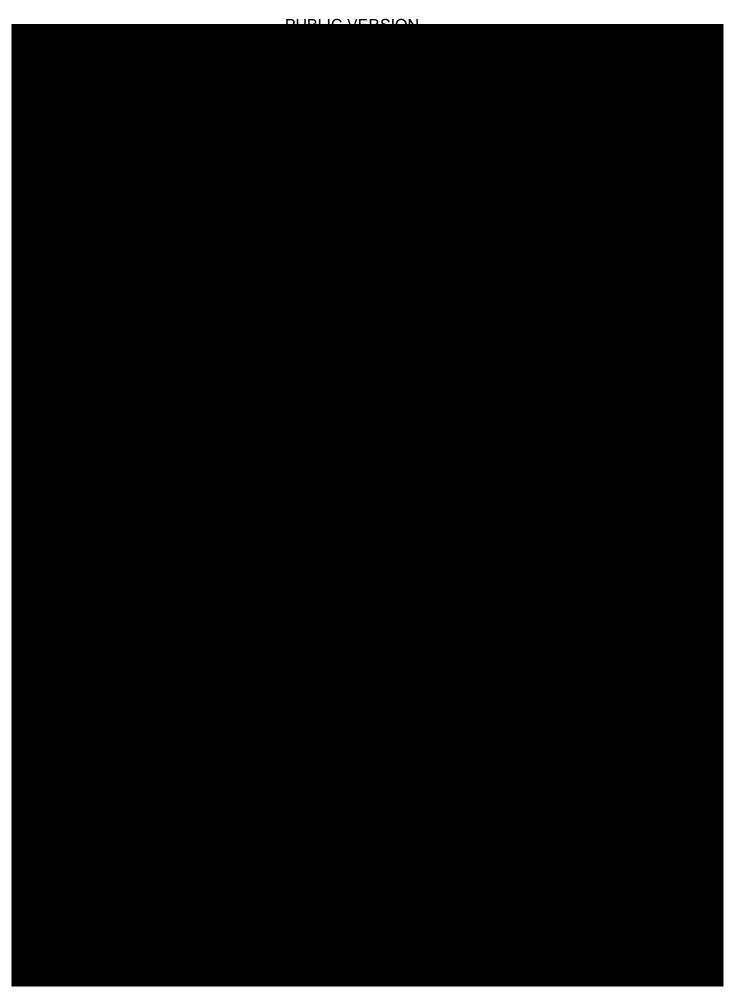












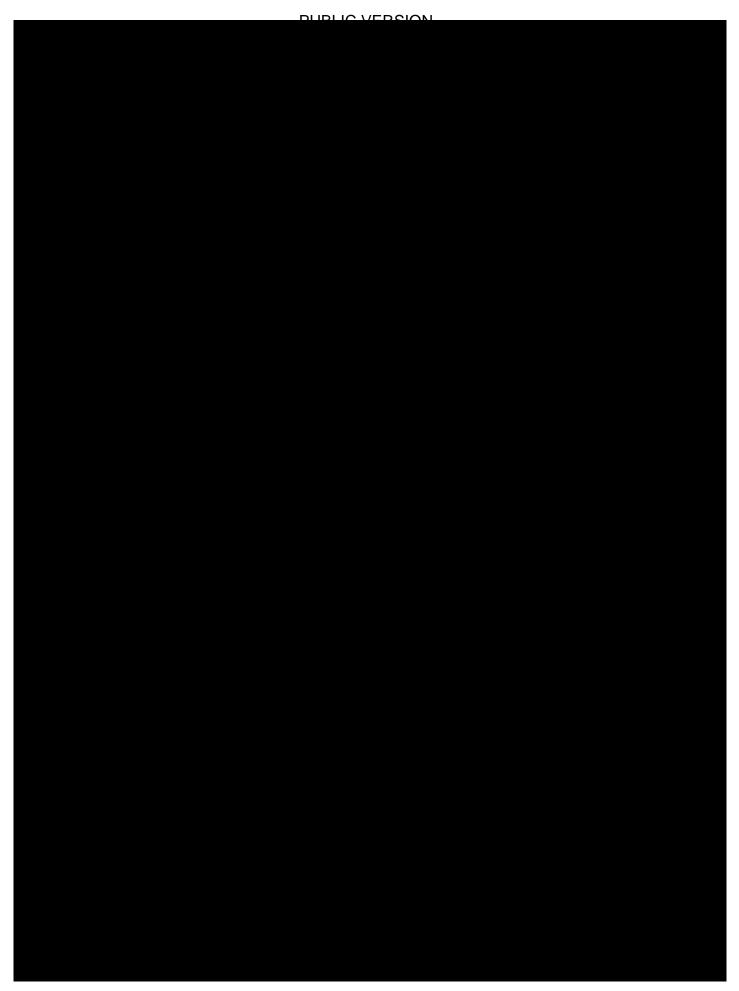


Exhibit 3

ATTACHMENT AGREEMENT

THIS AGREEMENT, made this <u>15</u> day of <u>September</u>, 19<u>n4</u>, by and between METROPOLITAN EDISON COMPANY, a Pennsylvania corporation and PENNSYLVANIA ELECTRIC COMPANY, a Pennsylvania corporation, collectively doing business as GPU ENERGY, and hereinafter called "Owner",

and

BELL ATLANTIC - PENNSYLVANIA, INC., a Pennsylvania corporation, hereinafter called "Licensee",

WITNESSETH:

WHEREAS, Owner operates and maintains an electric distribution system consisting of various pole lines, wires, guy wires, cables, lines, fibers, transformers and other related equipment and apparatus, extending in and through the various cities and communities in its franchised service area in Pennsylvania; and

WHEREAS, Licensee has requested Owner to permit it to attach its fiber optic and/or metallic/copper cable facilities to certain of Owner's poles outside of the Licensee's franchised service areas for Licensee's use to provide telecommunications services to and from various Pennsylvania locations; and

WHEREAS, it is agreed that the stringing of such cable facilities owned and maintained by a party for private purposes on electric poles clearly presents significant risk of damage to Owner's equipment and potentially preempts communication space on the poles which is often later needed for Owner's plant, both of which are undesirable from Owner's viewpoint; and

WHEREAS, Owner is willing to permit Licensee to attach its facilities to Owner's poles under certain terms and conditions.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and agreements herein contained, the parties hereto, for themselves and their representatives do hereby covenant and agree, each with the other, as follows:

ARTICLE I

- 1. This Agreement provides for the attachment of Licensee's facilities, consisting of one (1) cable not to exceed a maximum aggregate diameter of more than two (2) inches, designated in "Exhibit A", attached hereto and incorporated herein by reference, in Pennsylvania and to be used in providing telecommunications services to and from various locations.
- 2. Licensee, at any time, shall not make any additions to or changes in the location of its attachments, or perform overlashing of fiber optic cables or any additional cables/wires of any other type without the prior written consent of Owner; provided however, that in cases of emergency, Licensee may make such additions or changes upon verbal consent from Owner, which verbal consent shall become invalid unless Licensee confirms it in writing within Ten (10) days.
- Licensee may also from time to time make attachments to additional poles of Owner in accordance with the aforesaid specifications, by submitting further application in the form set forth in "Exhibit C", attached hereto and made a part hereof.
- 4. Licensee covenants that it will provide, have and maintain sufficient shielding or other devices on its facilities attached to Owner's poles permitted herein to prevent interference damage with or to Owner's facilities and the facilities of others permitted by Owner to use said poles.

ARTICLE II

- 1. Subject to the default clause herein provided, this Agreement shall continue in force and effect for a period of One (1) year from and after the date hereof. In the event Licensee is not in default in the performance or observance of any of the covenants or provisions of this Agreement, this Agreement shall automatically renew from year to year after the end of the initial One (1) year period and until terminated by either party giving to the other written notice of termination at least Six (6) months in advance of the termination date specified in said notice.
- 2. Immediately after the termination of this Agreement as herein provided, Licensee shall proceed to remove its attachments from Owner's poles without undue delay and as Owner's needs may require, the maximum period of removal to be not more than thirty (30) days from the termination date, and any attachments not removed within that time shall become the property of Owner, or, at Owner's option,

removed by Owner at Licensee's expense and for its account. Bill for such expense incurred shall be due and payable within thirty (30) days of receipt.

3. Immediately after the removal of Licensee's attachments from Owner's poles, Licensee shall restore to Owner the space theretofore occupied by it on said poles in as good condition as when first occupied, reasonable wear and tear excepted; and, should any damage to Owner's poles or other property, or to the property of others permitted by Owner to use said poles, result from the removal of Licensee's attachments therefrom, Licensee shall forthwith, either repair such damage or compensate the party suffering such damage.

ARTICLE III

- 1. Owner reserves the right, in its exclusive discretion, to permit others to use said poles.
- 2. If in Owner's exclusive discretion, Licensee's attachment to said poles hereafter interferes in any respect with pre-existing attachments by Owner or others permitted by Owner, the Licensee shall, at its sole cost and expense and upon thirty (30) days prior written notice from Owner, move or change the location of said attachments or remove them entirely. Should Licensee fail to do so, Owner may do so and invoice Licensee for which payment thereof shall be due and payable within thirty (30) days of receipt.

ARTICLE IV

- 1. Said attachments are to be made on poles of Owner in a manner specified by Owner and so as not to interfere with the present and/or any future use (e.g., including but not limited to installation of a transformer, installation of a recloser or a rephasing of conductors) by Owner, or the present use other licensees, not parties to this agreement, have made of said poles with Owner's permission.
- 1a. Licensee's attachments shall be maintained at the sole risk and expense of Licensee, and at any time, upon written notice from Owner, Licensee shall change, alter, improve or renew its facilities in such manner as Owner may direct. Licensee shall perform such work at its own expense except in cases where the cause is due solely to changes, improvements or renewal of Owner's facilities (e.g., including but not limited to installation of a transformer, installation of a recloser or a rephasing of conductors) or where the cause is due solely to changes, improvements or renewal of facilities of licensees not parties to this agreement. Where either of these exceptions occur, Licensee's expenses for such work shall be paid by Owner or by the other licensee(s), not parties to this agreement, as applicable. Licensee shall change, alter, improve, renew and transfer its facilities at its own expense in routine pole replacements or pole replacements due to emergency situations (e.g., including but not limited to car/pole accidents, storm-related events).

- 2. Said attachments are to be installed and at all times maintained by Licensee strictly in accordance with Owner's standard practices and procedures and the provisions of the latest edition of the National Electrical Safety Code and/or any other applicable regulations or codes promulgated by the national, state, local or other governmental authority having jurisdiction thereover.
- Licensee agrees to take all additional necessary precautions as the circumstances may require and install protective equipment or take other reasonable means to protect all persons and property against injury or damage caused by Licensee's attachments.
- 4. Owner shall be the sole judge as to its requirements for the present and/or future use of its poles, attachments, facilities and equipment, and also of any interference therewith by Licensee, and shall also be the sole judge of whether or not Licensee's attachments comply with the codes, regulations and covenants aforesaid. Nothing herein contained shall be construed as limiting or affecting any existing or future rights or privileges granted by Owner, by contract or otherwise, to others not parties to this Agreement, to use any poles covered by this Agreement; and Owner shall have the right to continue and extend such rights or privileges. The attachment privileges herein granted shall at all times be subject to such newly extended, existing and continued contracts and arrangements.

ARTICLE V

- 1. Licensee may also from time to time make attachments to additional poles of Owner, in accordance with the aforesaid specifications, by submitting a written application and receiving a license in the form set forth in "Exhibit C", attached hereto and made a part hereof.
- 2. Whenever Licensee desires to make additional attachments to Owner's poles, Owner hereby grants permission to Licensee to engineer all new line extensions and any rebuild of existing facilities on Owner's poles for compliance with terms and conditions more fully described in herein.
- 3. For pole attachments where Licensee's engineering evaluation has determined that no make-ready work is required, Licensee shall submit Two (2) copies of "Exhibit C", attached hereto and made a part hereof, to Owner within Ten (10) days of making said attachment(s) to Owner's pole(s).
- 4. For pole attachments where Licensee's engineering evaluation has determined that make-ready work is required, Licensee shall submit Two (2) separate copies of "Exhibit C", attached hereto and made a part hereof, to Owner. Owner, through its own engineering evaluation, shall determine make-ready work costs and Owner shall notify Licensee in accordance with terms and conditions more fully described in Article V.6. Owner shall perform required make-ready work in a timely fashion after receiving

written notification and advance payment from Licensee. Owner shall notify Licensee when make-ready work has been completed and pole is ready for new attachment.

- 5. Owner reserves the right to revoke permission to Licensee to engineer all new line extensions and any rebuilds of existing facilities in its sole discretion. Upon termination of Licensee's engineering of all new line extensions and rebuilds, it is understood that Owner shall inspect and engineer all poles listed on Licensee's "Exhibit C" application form, attached hereto and made a part hereof, and Licensee shall reimburse Owner for all appropriate expenses and related overheads incurred by Owner in performing the inspection of its poles.
- 6. Whenever Owner determines that a pole which Licensee has applied to attach to in writing and said pole is deemed inadequate by Owner by reason of insufficient height or strength to accommodate the proposed attachment(s) of Licensee in addition to the existing attachment(s) of Owner and other licensees thereon, and said pole would have been sufficient in height and strength to accommodate the attachments of Owner and other licensees if Licensee's proposed attachment(s) were not on the pole. Owner shall replace said pole with a new pole of the necessary height and strength and/or shall make such other changes in the existing pole line in which said pole is included as the conditions may then require. Licensee shall reimburse Owner for all costs associated with such installations, replacements, guying relocations, transfers or other changes to Owner's facilities, equipment and material necessitated thereby, less the actual salvage value of any removed poles or other facilities that may, in Owner's sole discretion, be salvaged by Owner. Invoices for such costs shall be due and payable by Licensee within thirty (30) days of receipt. Also, Licensee, on demand, shall reimburse each owner of other facilities attached to said pole for any expense incurred by said owner in transferring or rearranging its facilities to accommodate Licensee's proposed attachments.
- 7. Licensee will be billed by Owner for any and all unauthorized attachments discovered by Owner in the amount of one hundred (\$100.00) dollars per unauthorized attachment and will be deemed liquidated damages due to Owner. All attachments discovered to have gone unreported in excess of ten (10) days will be deemed to be unauthorized.

ARTICLE VI

In the event that it becomes necessary in view of the specifications, rules, regulations or orders referred to in Article IV hereof to strengthen any such pole by guying in order to accommodate Licensee's attachments. Owner may at its option accept guying or bracing to be performed by Licensee with such

materials and in such manner as Owner may approve, or Owner may itself provide such guying or bracing in which event Licensee shall pay Owner the actual cost thereof.

ARTICLE VII

1. It is understood and agreed that the permission here given is a mere license and that Licensee hereby assumes any and all risk in connection with the exercise thereof and releases Owner from any claims for damage that may occur to Licensee's attachments, except if caused by the willful misconduct of the Owner. Licensee further agrees to indemnify, protect, defend and save harmless Owner from and against any and all claims, liability, cost, expense, loss and damage resulting from injury or damage to persons or property, including injuries to the employees or damage to the property of Owner, its successors, assigns and lessees, resulting directly or indirectly from, or incurred in connection with, the placing, presence, use, maintenance and removal of said attachments, wires and fixtures, except if caused by the willful misconduct of the Owner; and such loss shall include all costs, charges, expenses and attorney's fees reasonably incurred in connection with such injury or damage, and also any payments made by Owner to its injured employees, or to their relatives or representatives, in conformity with the provisions of any employers' liability or workmen's compensation act or acts. Licensee shall carry insurance to protect the parties hereto from and against any and all claims, demands, actions, judgments, costs, expenses and liabilities of every name and nature which may arise or result, directly or indirectly, from or by reason thereof. The minimum amounts of such insurance shall be:

Type of Insurance	Limits of Liability
Worker's Compensation	Statutory
Employer's Liability	\$ 500,000 per occurrence
Comprehensive General Liability	
Bodily Injury	\$1,000,000 per occurrence
Property Damage	\$1,000,000 per occurrence
Endorsements Required	

Blanket Contractual Coverage Products/Completed Operations Coverage Independent Contractors Coverage Broad Form Property Damage

Automobile Liability Insurance (owned, hired, non-owned)

Bodily Injury

\$1,000,000 per occurrence

Property Damage

\$1,000,000 per occurrence

2. Licensee shall name Owner as an additional insured under the above policy(s) and provide Owner with certificate(s) of insurance upon the execution of the Attachment Agreement. The above policy(s) issued to Licensee shall not be canceled or changed except after thirty (30) days written notice to Owner.

3. Notwithstanding the foregoing, Licensee shall maintain the right to self-insure, subject to the amounts herein

ARTICLE VIII

Owner reserves the right to discontinue the use of, remove, replace or change the location of Owner's poles or Licensee's attachments thereto, and Licensee shall at its sole cost and expense, upon thirty (30) days' written notice by Owner, make such changes in or removal of its attachments as shall be required by any such action of Owner. Or if Licensee shall fail to do so, Owner shall have the right to remove and/or relocate Licensee's attachments and invoice Licensee as hereinbefore described.

ARTICLE IX

1. Whenever, in the opinion of Owner, Licensee's attachments interfere with the operations of the equipment of Owner or other licensees or constitute a hazard to the service rendered by Owner or other licensees or fail to be in compliance with the codes and/or regulations hereinbefore mentioned, the Licensee shall, upon written notice from Owner to Licensee of such interference, hazard or non-compliance, either immediately remove its attachments, or rearrange or change its attachments as directed by Owner, all at Licensee's sole cost and expense or upon failure to do so, Owner may perform such work at Licensee's expense and invoice Licensee as hereinbefore described.

2. In case of emergency, and upon failure of Licensee to respond to Owner's request to relocate its facilities. Owner reserves the right to remove or relocate the attachments of Licensee at Licensee's expense without notice, and no liability therefor shall be incurred by such action. Licensee may at any time abandon the use of a jointly used pole hereunder by giving written notice thereof to the Owner and immediately thereafter removing therefrom all of its attachments.

ARTICLE X

Owner shall not be required to secure any right, license or permit from any governmental body, authority or other person or persons which may be required for the construction or maintenance of said attachments of Licensee, and Owner does not hereby provide any easements, rights-of-way or franchise for the construction and maintenance of said attachments, all of which are the sole responsibility of Licensee. Licensee hereby agrees to indemnify, defend, and save harmless Owner from any and all claims or liability resulting from or arising out of the failure of Licensee to secure such rights, licenses, permits or easements for the construction or maintenance of said attachments on Owner's poles.

ARTICLE XI

If Licensee shall fail to comply with any of the provisions of this Agreement, including the specifications hereinbefore referred to, or defaults in the payment of rentals or the performance of any of its obligations otherwise under this Agreement and shall fail within thirty (30) days after written notice from Owner to correct or diligently pursue correction of such defaults or non-compliance. Owner may, at its option, terminate this Agreement. In no case shall Owner be required to permit Licensee's efforts to correct such default(s) or non-compliance to extend more than sixty (60) days from such notice prior to termination.

ARTICLE XII

- 1. Licensee shall pay to Owner, upon execution of this Agreement, a license preparation and administration fee of One Thousand (\$1,000.00) Dollars.
- 2. Licensee agrees to pay to Owner an annual rental equal to Twenty-five Dollars (\$25.00) per pole per year. Rental shall be paid based upon the number of poles to which Licensee has attached to any portion of Owner's poles at the time of annual billing. Said rental shall be payable in advance, the first payment to be made upon the execution of this Agreement. Each ensuing annual payment is to be made on the same date each year thereafter.
- 3. Owner's pole rental charge shall also include an annual increase of four percent (4%) per year for as long as this agreement shall remain in force.
- 4. Should the development of a regulated rental rate by the Federal Communications Commission, the Pennsylvania Public Utility Commission or any other governing agency occur during the term of this agreement, Owner's rental rate, described in Paragraph Two (2) above, shall be compared to the governing agency's regulated rate and the higher of the two rates shall be the applicable rate for successive annual rental periods during the remaining term of this agreement.

ARTICLE XIII

If one party hereto is obligated hereunder to perform certain work at its own expense and it is mutually agreed between the parties hereto that it is desirable for the other party to do the said work, then the said other party shall promptly do the work at the sole expense of the party originally obligated to perform the same. Bills for the expense incurred shall be due and payable within thirty (30) days of receipt.

ARTICLE XIV

In the event of a pole replacement, Owner may at its option, transfer Licensee's facilities for a charge to Licensee of One Hundred Dollars (\$100.00) per strand for performance of said transfer. If Owner opts to not perform such work, it shall notify Licensee and Licensee shall then be responsible to coordinate the transfer of its facilities with the Owner. If Licensee fails to do so and the absence of Licensee requires a return trip by Owner to remove the original pole, Licensee shall reimburse Owner for all costs associated with a return trip to the pole location, including premium wage rates, in order to remove the original pole or may, at Licensee's option, promptly perform such pole removal at its sole cost and expense. Owner shall not be liable for any loss or damage to Licensee's attachments or the system of which they may be a part, including the loss of, or interference with the service or use of said Attachments or system, by performance of any of the work in rearranging or transferring such Attachments.

ARTICLE XV

Licensee will not commit, nor will it suffer to be committed by others, any waste of Owner's property or the property of others permitted by Owner to use its poles, and Licensee covenants further that it will protect such property to the reasonable extent of its ability.

ARTICLE XVI

Any delay of Owner to give Licensee notice of its default in any provision of this Agreement shall not be deemed a waiver of such provision or Licensee's default in the performance of such provision.

ARTICLE XVII

Licensee shall not assign, transfer or sublet any of the rights hereby granted without first obtaining written consent from Owner which shall not be unreasonably withheld.

ARTICLE XVIII

 This Agreement shall be construed under and in accordance with the laws of the Commonwealth of Pennsylvania.

2. If any one or more of the provisions contained in this Agreement shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision hereof and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed, in duplicate, the day and year first above written.

Witness:

METROPOLITAN EDISON COMPANY and PENNSYLVANIA ELECTRIC COMPANY, collectively doing business as GPU ENERGY

Title General

l Managar Development

Witness:

Title Manager-Budget/Right/of Way

Special Projects

BELL ATLANTIC, - PENNSYLVANIA, INC.

Title Director-Facilities Management

Western and Central Pa

"EXHIBIT A"

SCHEDULE OF EXISTING ATTACHMENTS MAINTAINED BY BELL ATLANTIC - PENNSYLVANIA, INC.

ON POLES OF

GPU ENERGY	REGION,	COUNTY
,	TOWNSHIP	
Pole Number	Location	

Strand fiber optic cable, messenger cable and appurtenances

Pair metallic/copper cable, messenger cable and appurtenances

Exhibit 4

TELECOMMUNICATION POLE AND ANCHOR ATTACHMENT LICENSE AGREEMENT

COMPANY: MCI COMMUNICATION SERVICES, INC.

DATE: October 1, 2009

PUBLICIVER SION

1.	Term	Page
2.	Operation Area	1
3.	Application	2
4.	Licensee's Responsibility	2
5.	Other Users	2-3
6.	Permitted Use	3
7.	Attachment Space	3
	 a. Poles and Anchors b. Specifications c. Owner Warranty d. License Breach of Contract e. Inspection of Licensee's Facilities 	3 3-4 4 4
8.	Permit Revocation	5
9.	Owner Liability	5
10.	Transfer of Licensee's Facilities by Owner	5
11.	Owner's Right	5
12.	Removal of Attachments by Licensee	6
13.	Attachment a. Rates b. Rental Adjustments c. Invoice Payments	6 6 6
14.	Make Ready Work	6
15.	Attachment Identification Tags	7
16.	Abandonment of Poles	7
17.	No Alterations by Licensee	8
18.	Unauthorized Attachments	8
19.	Indemnity by Licensee	8
20.	Insurance	9
21.	Bond Requirement	10
22.	Notices	10
23.	Termination	10
24.	Default of Performance	11
25.	Removal	11
26.	Prior Agreements/Assignment/Partial Invalidity	11
27.	Assignment	11
28.	Partial Invalidity	11
29.	Pole Loading Calculations	11

(Oct. 11, 2004)

TELECOMMUNICATION POLE AND ANCHOR ATTACHMENT LICENSE AGREEMENT

THIS AGREEMENT, effective August 1, 2009, by and between the POTOMAC EDISON COMPANY, MONOGAHELA POWER COMPANY & WEST PENN POWER COMPANY dba ALLEGHENY POWER, (hereinafter referred to as "Owner") whose operations mailing address hereunder shall be 800 Cabin Hill Drive, Greensburg, PA 15601, and MCI COMMUNICATIONS SERVICES, INC. (hereinafter referred to as "Licensee") whose mailing address hereunder shall be 2400 North Glenville, Richardson, TX 75082

WITNESETH:

WHEREAS, in connection with its business as an electric utility the Owner owns and uses poles and anchors upon various lands owned by it, or over which it has rights-of-way, to support wire lines and facilities for the sub-transmission and/or distribution of electricity;

WHEREAS, the Licensee desires to use, from time to time, certain of the Owner's said poles and anchors for the purpose of supporting cable facilities and other appurtenances and equipment of the Licensee necessary thereto for use in furnishing fiber-optic services of the Licensee; and

WHEREAS, the Owner is willing to permit to the extent that it may lawfully do so, the attachment to its said poles and anchors of such line and/or cable facilities and other appurtenances and equipment of the Licensee necessary in the providing fiber-optic services of the Licensee to others and upon the conditions hereinafter set forth;

NOW, THEREFORE, for mutual valuable consideration, it is hereby agreed as follows:

1. Term

This Agreement shall become effective on the date set forth above and, if not terminated previously in accordance with the provisions hereof, shall continue in effect for a term of ten (10) years from date hereof and thereafter until terminated by either party as set out in Section 23.

2. Operations Area

The Owner hereby grants to the Licensee during the term hereof the nonexclusive right to attach to the poles and anchors of the Owner in the municipalities and/or areas in which Owner provides its services upon compliance by the Licensee with the conditions hereof, cable and/or other cable facilities of the Licensee and appurtenances necessary thereto.



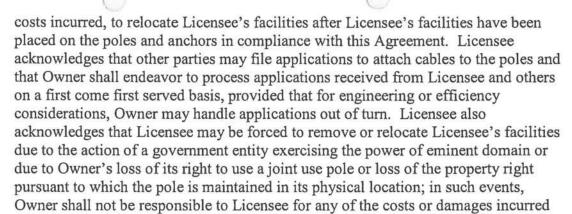
Whenever the Licensee shall desire to attach to any pole and/or anchor of the Owner any lines and/or appurtenances necessary thereto, the Licensee shall so request of the Owner in writing, at its office Allegheny Power, Regulated Billing, 800 Cabin Hill Drive, Greensburg, PA 15601. Such request shall be in the form of Exhibit A, attached hereto as a part hereof, shall be accompanied by such drawings similar to detail pole attachment data sheet, Exhibit AD-1, location, type and size, and the Owner's identifying number, of each pole to which attachment is desired, the kinds and number of lines proposed to be attached thereon, amount of space to be occupied and the manner of attachment of each. Within ten (10) business days following receipt of any such request, or as soon thereafter as reasonably possible, the Owner shall notify the Licensee in writing as to whether such request shall be, in the Owner's sole discretion, granted or denied. Incomplete or inaccurate applications shall be returned to Applicant for correction and resubmission. No attachment to a pole or anchor of the Owner's shall be made by the Licensee without prior written approval of the Owner. All expenses incurred by the Owner in reviewing Licensee's request for an attachment shall be borne by the Licensee, via rate calculations, even if such attachment request is denied by Owner.

4. Licensee's Responsibility

No right of use, however granted, of the poles or payment of any fees or charges required under this Agreement will create or vest in the Licensee any ownership or property right in the poles. Nothing in this Agreement will be construed in any way as indicating that Owner has conveyed to Licensee any ownership or property right in the poles and anchors. Notwithstanding the attachment of the cable or other facilities to the poles and anchors, Licensee will continue to be the owner of such facilities, and Licensee shall repair, maintain and remove its cable facilities under the terms and conditions specified in this Agreement. Along with the first application filed with respect to each political jurisdiction in which the subject poles are located, Licensee shall submit as requested by Owner appropriate documentation demonstrating that Licensee possesses a permit, franchise, necessary rights-of-way or easements or other right to place its facilities within private property or the public rights-of-way within that jurisdiction. Such documentation shall demonstrate that the rights held by Licensee are appropriate for Licensee's intended use of the cable.

5. Other Users.

Nothing in this Agreement will be construed as affecting any rights previously conferred by Owner by agreement to others to make attachment to the poles and anchors (including but not limited to joint use or joint ownership agreements), and Owner (and in some cases such joint user or joint owner) will continue to have all rights which it now possesses to grant such rights, provided that Owner or such joint user or joint owner shall not grant to any third party contractual rights that would entitle such third party to force Licensee to remove or, without reimbursement of



6. Permitted Use

by Licensee.

Licensee will use the facilities attached to the poles and anchors solely for the purpose of a communications system, which may encompass cable television, internet services, telecommunications, data information services and all other forms of cable communications. If Licensee specifies in its application that it will use its facilities solely to provide cable television services, and if Licensee later uses any portion of its facilities for any other purpose, Licensee shall immediately notify Owner of the nature of such additional use and the date of commencement of such additional use. Upon commencement of such additional use of the facilities on all or any of the poles licensed hereunder, the rate used to calculate the license fee payable under this Agreement shall be increased to the highest rate applicable to any of the categories of use specified by Licensee as having been commenced by Licensee. The poles are and will continue to be used, operated, and maintained primarily for the purposes of Owner, and Licensee's use will be secondary, but Owner shall not disturb Licensee's facilities or use of the poles and anchors except to the extent authorized in this Agreement.

7. Attachment Space

(a) Poles and Anchors

Not more than twelve (12) inches of the length of any pole side shall be occupied by the attachment of each line thereto by the Licensee. In the event the Licensee desires to occupy more than twelve (12) inches of any pole side by attachment hereunder, specific written permission for such additional occupancy shall be first obtained from the Owner. Should Licensee occupy more than twelve (12) inches of space on any of Owner's poles, the Licensee hereby agrees to pay additional rent for the additional space occupied. The additional rental for the additional space shall be calculated as provided herein. Attachments to Owner's anchor rods shall be made directly to a vacant anchor eye position or with direct rod auxiliary eye attachment.



(b) Specifications

All attachments licensed hereunder shall be made, and all such attachments and all lines so attached shall be maintained, by the Licensee in conformity with the minimum clearance and other requirements of the National Electric Safety Code, the requirements, rules and regulations of the Owner and all laws and governmental regulations, in effect from time to time, and in such manner as not to interfere, in the opinion of the Owner, with the use, operation or maintenance of, or endanger, lines or other facilities attached to, or in the vicinity of, poles of the Owner. The expense of any change in or to other facilities, either new or existing facilities, in the opinion of the Owner necessary to accommodate attachments of the Licensee hereunder, shall be borne by the Licensee.

All attachments of Licensee will be placed within the space and at the location approved by the Owner. All attachments of Licensee will be placed within the communications space on the pole unless otherwise authorized by Owner, which authorization may be withheld at Owner's sole and absolute discretion.

(c) Owner Warranty

Owner does not warrant that poles or anchors covered hereunder are of any particular quality or strength or that such poles or anchors are suitable to support the Licensee's facilities, employees, agents or subcontractors. It is the Licensee's sole responsibility to insure that the requirements of the National Electrical Safety Code and all applicable laws and governmental regulations are met with respect to the attachments of the Licensee's facilities recognizing the Owner's and other licensee's (s') facilities currently on the pole or anchor.

(d) Licensee Breach of Contract

In the event the Licensee, in the opinion of the Owner, fails to make or maintain any such attachments, or fails to maintain any lines or facilities so attached, as required herein, and if within fifteen (15) days after receipt by the Licensee of written notice of such failure from the Owner the Licensee has not corrected the same to the satisfaction of the Owner, the Owner shall have the right, at the Licensee's expense, to make the necessary corrections or remove such lines and attachments thereof, from the Owner's poles, anchors and rights-of-way.

(e) Inspection of Licensee's facilities

From time to time the Owner, at its election and at the Licensee's expense, may inspect any facilities of the Licensee attached to poles and anchors of the Owner and the attachments thereof. Licensee shall be provided a fifteen (15) day written notice of such inspection and will be requested of accompany the Owner's inspector. Such reimbursement shall be actual expenses plus overheads and will not exceed in any year the total expense of one field inspection of the Licensee's entire line. The making of, or the failure to make, any such inspections by the Owner shall not operate to relieve the Licensee of any liability or obligation imposed upon the Licensee by this Agreement or otherwise.